July 9, 1956

Now "El Capitan" Rides High . . . p.42

RAILWAY AGE

WORKBOOK OF THE RAILWAYS

THE INDUSTRY'S ONLY WEEKLY NEWSMAGAZINE

HERALD OF A NEW DAY

— IN FREIGHT TRAIN BRAKING

To the hundreds of top railroad officials who inspected the first freight car in actual service equipped with Buffalo Single Disc Brake-X at the A.A.R. meetings in Chicago last month, this was indeed the forerunner of a new concept in freight train operation. No single braking development in this century has fired the imagination of so many in the industry as has this completely new braking system.

Buffalo Brake Beam Company, New York

New Look for *El Capitan*

Passengers will soon find even greater comforts and attractions on Santa Fe's El Capitan. For years this luxurious all-chair train between Chicago and the West Coast has been a favorite with the traveling public. Now the proud train is to have a new look, and the look is more than skin-deep. It's all the way through.

Outstanding feature of the new El Capitan will be ultramodern two-level cars built by the Budd Company of Philadelphia. The consist of each train will be seven chair cars, with all seats on the upper level; a diner with the entire upper deck devoted to table space; and a dome-type lounge car that offers unlimited panoramic views of the landscape. All cars are fifteen feet, six inches high — two feet higher than conventional equipment.

Among the basic items of running-gear are Bethlehem wrought-steel wheels and forged-steel axles. Needless to say, these Bethlehem products are fashioned to the highest standards of workmanship; they are worthy components, like everything else in the cars. We at Bethlehem are happy indeed at this association with El Capitan, a famous train, and with the Budd Company, master carbuilders.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

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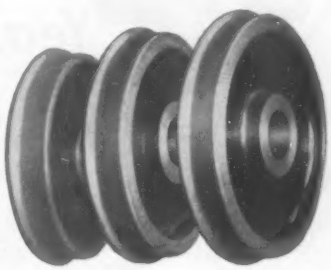

BETHLEHEM WROUGHT-STEEL WHEELS

COMPANIONS TO BETHLEHEM FORGED-STEEL AXLES

FREIGHT • PASSENGER • DIESEL

UNION Electro-Pneumatic Retarders

Give Maximum Performance and Save Space, too!

INSTALLATION OF CAR RETARDERS on curved track, an exclusive UNION feature, permits compact track layouts in limited yard areas . . . assures maximum classification track capacity.

All you have to do is see a UNION Electro-Pneumatic Car Retarder in action and you can quickly spot its advantages. Powerful air cylinders give it instantaneous operation, combining firmness and resilience. It maintains the desired braking pressure for any width of wheels regardless of brake shoe wear. Shocks are not transmitted back to electrical or mechanical devices, because of the cushioning effect of air.

Another *big* advantage is the saving in space. UNION retarders are made in 6 ft. 3 in. sections . . . each with its own power cylinder, brake beams and shoes . . . and can be installed on curves. Detector track circuits can be placed within the retarder, avoiding the use of extra lengths of track between switch points and the retarder.

Classification tracks can be made longer with the leads and switches grouped closer to the crest . . . and most important, less height is required for the crest and car speeds can be controlled properly with a minimum of retarder sections.

These and other advantages of UNION car retarders pay off in lower capital investment and substantial savings in day-to-day operating expense. Call or write our nearest office for full information on the latest equipment.

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DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

NEW YORK CHICAGO SWISSVALE, PA. ST. LOUIS SAN FRANCISCO

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Workbook of the Railways

Vol. 141, No. 2
July 9, 1956

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Week at a Glance

No more loose journal packing . . .

. . . after August 1, 1957, on new and rebuilt cars, and no more on any cars in interchange service after August 1, 1960, is the effect of action taken by the Mechanical Division of the AAR at its Chicago convention. The step confirms a recent letter ballot and gives the division's endorsement to "the principle" of lubricating devices. . . . p.7

Net income of Class I railroads . . .

. . . in May was $85 million, after interest and rentals, the AAR's Bureau of Railway Economics estimates. That was $1 million below the net income for May 1955 . . . p.8

FORUM: $2,500 in prizes . . .

. . . have been made available for the best presentation of ideas on two vital aspects of the railroads' freight-car fleet. Details about the competition appear on . . . p.41

Santa Fe's new "high level" cars . . .

. . . built by Budd, are to reequip the road's 18-year-old Chicago-California "El Capitan." All passengers in these stainless steel cars ride at dome car heights. The new "El Capitan" can be two cars shorter and seat 146 more than the former trains on the run, with almost no change in total train weight. . . . p.43

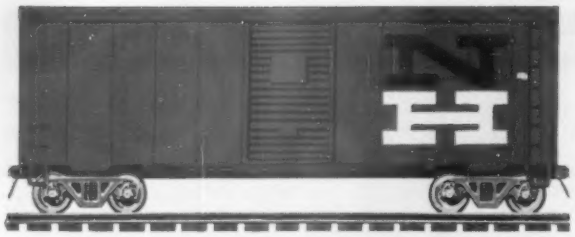
Use of heavy-duty push cars . . .

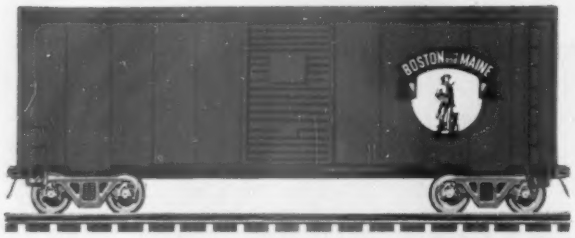
. . . in laying 663-ft butt-welded rails on the Wabash—which avoided need for a work train—was an integral phase of an enlarged butt-welding program undertaken by the road this year. . . . p.48

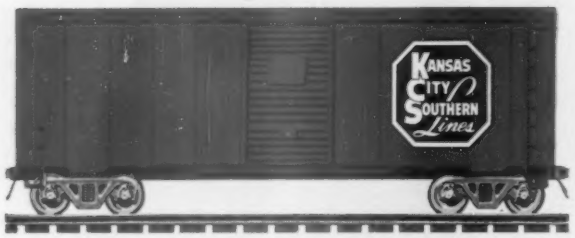
BRIEFS

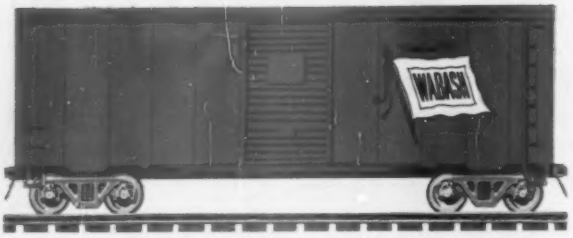
Impact of the steel strike . . .

. . . was felt almost immediately by the railroads last week and is expected to become increasingly severe if the shutdown lasts long enough to curtail general industrial production. Roads moving large volumes of coal and raw materials to steel mills, and finished products from them—like the Penn-









6 MAJOR RAILROADS SPECIFY NEW HYATT HY-ROLL BEARINGS FOR FREIGHT CARS!

Over 9,000 HYATT Hy-Rolls have already been ordered by these progressive roads—a tremendous vote of confidence in this latest achievement of America's *first* and *foremost* builder of cylindrical roller bearings!

Like all of the thousands of railroad roller bearings HYATT has built, the Hy-Roll has husky, high-capacity *straight cylindrical rollers.* That means easier installation—less maintenance—more load-carrying capacity—longer life.

Now is the time to make sure your new freight cars will *return maximum profit and remain competitive for years to come*—call your HYATT Sales Engineer today or write Hyatt Bearings Division of General Motors, Harrison, New Jersey.

More Hyatt Roller Bearings are used on American railroads than any other make!

HYATT

BEARINGS FOR NON-STOP FREIGHT

Another GM contribution to railroad prosperity

Current Statistics

Operating revenues, four months	
1956	$3,413,453,838
1955	3,104,423,778
Operating expenses, four months	
1956	$2,652,535,732
1955	2,371,029,566
Taxes, four months	
1956	$361,838,961
1955	328,525,317
Net railway operating income, four months	
1956	$313,059,632
1955	322,371,153
Net income, estimated, four months	
1956	$236,000,000
1955	241,000,000
Average price 20 railroad stocks	
July 2, 1956	102.02
July 5, 1955	98.40
Carloadings revenue freight	
Twenty-five weeks, 1956	18,172,120
Twenty-five weeks, 1955	17,184,253
Average daily freight car surplus	
Wk. ended June 23, 1956	3,524
Wk. ended June 25, 1955	5,052
Average daily freight car shortage	
Wk. ended June 23, 1956	9,858
Wk. ended June 25, 1955	12,107
Freight cars on order	
June 1, 1956	133,072
June 1, 1955	16,886
Freight cars delivered	
Five months, 1956	27,639
Five months, 1955	14,096
Average number railroad employees	
Mid-May 1956	1,061,972
Mid-May 1955	1,052,939

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Departments

Week at a Glance CONTINUED

sylvania, which relies on the steel industry for 30% of normal business—had to furlough large segments of labor forces.

No action on AAR revamp . . .

. . . was taken by the association's board of directors after discussion of a report submitted by Robert Heller & Associates. The discussion took place at the board's recent Washington meeting, after which President W. T. Faricy issued a statement to point out that the report was a "progress report" of a continuing study being made by the Heller firm. The study was undertaken last year upon Mr. Faricy's recommendation, and it is expected to be completed by the end of this year.

Sleeve bearings of three types . . .

. . . for application to freight-car journal boxes are soon to be tested on the bearing-journal machine at the AAR research laboratory in Chicago. These devices represent another approach to the problem of lubricating freight-car axle bearings.

Increase in mail pay . . .

. . . is sought by 29 Eastern railroads in an application filed with the ICC. Applicants said they lost $25 million on their 1955 mail business, and they asked the commission to investigate the situation with a view to fixing rates that will "reflect the full cost" of the service.

Cabinet Report bills are dead . . .

. . . because the House Committee on Interstate and Foreign Commerce has decided to take no action on them during the present Congress. The decision was based on a recommendation calling for further study, made by the subcommittee which held hearings on the proposed legislation, including the railroads' rate-freedom program. The committee's action was not unexpected, and it means that a new start will have to be made in the next Congress.

ORC&B kicks off 1956 wage drive . . .

. . . The union filed with the railroads last week notices seeking a 25% wage increase for all conductors and brakemen, plus an additional 20% for those in short turnaround service. Road conductors on an average earn now about $7,500 annually.

RAILWAY AGE
Workbook of the Railways

Death Knell for Loose Packing

Lubricators backed at AAR Mechanical Division convention, as hot box reduction is cited—Loose packing banned in interchange cars by August 1960

Loose packing in the journals of new and rebuilt cars will be banned after August 1, 1957, following action by the Mechanical Division of the AAR at the closing session of its recent 49th annual meeting at Chicago.

A motion to postpone the effective date for this step by three years was ruled out of order, and the annual report of the division's Committee on Lubrication of Cars and Locomotives was approved. The Mechanical Division action reaffirmed its March 5 letter ballot to outlaw loose journal packing.

Motion for postponement of the effective date was made by C. M. House of the Gulf, Mobile & Ohio who, in the June 18 issue of Railway Age, page 45, assailed the letter ballot as "asking the railroad industry to buy a 'pig in a poke'" and estimated that it will cost $100 million to install the lubricating devices on the two million cars now in service.

Mr. House argued that none of the lubricators are approved for unlimited application, that data from various railroads show widely different experiences with them, and that this action would replace a workable standard now in use with devices whose expected life service is uncertain and for which maintenance costs and practices are not fully developed.

Mandatory application of authorized journal lubricators on new and rebuilt cars after August 1, 1957, is required by the letter ballot, which was approved by a majority vote of car owners. (Mr. House, whose motion to postpone was seconded by a representative of the Burlington, called it a "small" majority.)

The ballot set August 1, 1960, as the date when lubricators must be in use on all cars in interchange service.

Favorable operating results for their lubricating devices were reported by the Baltimore & Ohio, the Pennsylvania and the Santa Fe mechanical departments. The Nickel Plate voted against mandatory application, according to Car Department Superintendent R. Schey, although he conceded that reports submitted by the Pennsylvania and the Norfolk & Western confirm that lubricating devices are an improvement.

M. A. Pinney, Pennsylvania engineer of tests, stressed that only the principle had been approved in the letter ballot, while the effective dates hinge on the committee's issuing an approved list. If none of the devices were to receive approval for unlimited interchange service, he said, the dates could not be mandatory.

Lubricating devices in PRR tests have given two to six times more mileage per hot box than is achieved on the same type cars in similar service when the cars have loose-packed journal boxes, Mr. Pinney reported. It was noted that PRR tests cover installations on at least 200 car sets—all on the same class of car in the same service, and that performances of cars of the same type with loose-packed journals are always used for comparison.

Only "real performers" will get on the AAR approved list, Mr. Pinney declared as he stressed the importance of supplying the lubrication committee with complete information on performance and maintenance. The devices do perform satisfactorily, they do reduce hot boxes, and there is indication that a three-year repack period will be satisfactory, the PRR's engineer of tests stated.

B&O Motive Power Superintendent F. B. Rykoskey declared that over 10,000 lubricators on B&O cars showed better performance than loose-packed-journal cars, and helped

Weekly Staff Meeting on the M&StL

Monday morning is pulse-taking time on the Minneapolis & St. Louis. President A. W. Schroeder has set up the weekly staff meeting so department heads can get together, compare notes, discuss problems and lay plans for the coming week. Regular participants (above, from left to right), include S. J. Owens, chief engineer; L. I. Gelfand, director of public relations; F. E. Clawson, director of industrial development; R. Musenbrock, general counsel; W. P. Coliton, vice-president — operations; Mr. Schroeder; R. W. Nelson, vice-president—traffic; W. E. Hanson, vice-president and comptroller; C. S. Weatherill, consulting engineer; W. O. Rux, superintendent of transportation and J. R. Sullivan.

to contribute to an improving hot box record over the past three years.

Successful renovation of lubricators in a standard waste washing machine after 90,000 miles of service was reported by A. J. Shulte, Santa Fe lubrication supervisor, who added that the devices are performing satisfactorily since renovation.

Complaining that production models of other devices such as packing retainers have proven inferior to custom-built samples originally approved, H. M. Wood, PRR assistant chief of motive power, suggested that lubricator manufacturers be asked to file specifications of their devices with the AAR.

Mr. Wood reported that 91 AAR members owning 82% of the total car fleet are working with lubricating devices. Some, he said, have only 10 to 15 car sets, while owners of 45% of the cars have from one to 30% of their fleets equipped. He outlined the PRR's experiences with lubricating devices since 1949 (Railway Age, Sept. 12, 1955, p. 46), noting that the road now operates 15,500 cars with lubricators or packing containers. He said 500 cars have accumulated more than 30,000,000 miles of operation since being equipped with lubricators.

Satisfactory operation of the RS journal stop and packing retainer is shown in the approved committee report, which relates that, after 53 months of service on the Frisco, bearings on a car with RS stops on one end and the standard arrangement on the other were in excellent condition on the RS end. All bearings were condemnable on the unequipped truck.

Other Frisco cars inspected showed journals, dry seats and wedges in "new" condition after two years of service and the committee commented without documentation that the stops "lengthen flange life." The device was termed a "satisfactory waste retainer" and said to prevent spread bearing linings.

Limited application was approved for the Southland lubricating pad and the Journapak journal lubricator, while the report showed that the record of 271 Illinois Central pulpwood cars with the IC dust cavity filler was nine times better than that of 1,531 like cars in the same service without the device. The IC was authorized to install the device on 2,500 cars.

Both the report and the discussion dealt with adoption of a single type grease for lubricating both passenger and freight car roller bearings to simplify oiling operations. It was suggested that a single standard quality should be specified for all applications. After studying breakage of freight car journal brass lugs, the committee recommended a revised design.

New Officers—C. E. Pond, general superintendent-motive power, Norfolk & Western, was elected chairman of the Mechanical Division for a two-year term. He succeeds D.S. Neuhart, general superintendent, motive power and machinery, Union Pacific. Chosen vice-chairman of the division was J. L. Robson, chief mechanical officer of the Great Northern.

May Net Was Down $1 Million

It was $85 million, compared with $86 million in May 1955 —Net railway operating income was up more than $1 million

Class I railroads in May had estimated net income, after interest and rentals, of $85,000,000, according to the Bureau of Railway Economics of the Association of American Railroads.

This was a decrease of $1,000,000 below the net of $86,000,000 reported for May 1955. The estimated net for this year's first five months was $322,000,000, down $6,000,000 from the $328,000,000 reported for 1955's first five months.

May's net railway operating income, before interest and rentals, was $102,472,454, up more than $1,000,000 from the May 1955 figure of $101,460,174. The five-months net railway operating income was $415,532,086, compared with $423,676,314 in 1955.

Fourteen Class I roads failed to earn interest and rentals in this year's first five months. The rate of return for the 12 months ended with May averaged 4.18%, compared with 3.89% for the 12 months ended with May 1955.

CLASS I RAILROADS—UNITED STATES

	1956	1955
Month of May		
Total operating revenues	$ 925,355,033	$ 852,552,169
Total operating expenses	701,614,581	636,411,508
Operating ratio—percent	75.82	74.65
Taxes	100,511,767	93,253,556
Net railway operating income (Earnings before charges)	102,472,454	101,460,174
Net income, after charges (estimated)	85,000,000	86,000,000
Five Months ended May		
Total operating revenues	$4,338,808,871	$3,956,975,949
Total operating expenses	3,354,150,312	3,007,441,074
Operating ratio—percent	77.31	76.00
Taxes	462,347,727	421,778,876
Net railway operating income (Earnings before charges)	415,532,086	423,676,314
Net income, after charges (estimated)	322,000,000	328,000,000

CPR Would Downgrade Diesel Firemen

Countering demands of the Brotherhood of Locomotive Firemen and Enginemen for a 25% wage increase, the Canadian Pacific has proposed to eliminate firemen in freight and yard diesel engines and to reclassify the position in passenger diesels to that of a semi-skilled "diesel helper."

Supporting its proposal, CPR informed a conciliation board considering the wage demand at Ottawa, that fireman so displaced could be absorbed in other railway work.

The road contended that, without detriment to safety or efficiency, it could carry out its proposals at a saving in labor costs of $5 million a year now, and $10.7 million a year in 1961, when dieselization of its lines will be virtually completed.

CPR General Solicitor I. D. Sinclair estimated that the demands made by the BLF&E would cost an additional $3.8 million per year, in addition to the costs of a new pension proposed by the union. The brotherhood has requested, in addition to the wage raise and the new pension, penalty pay in connection with statutory holidays and placement of a fireman on self-propelled units.

Mr. Sinclair said it is now possible for a passenger-train fireman to

(Continued on page 10)

RAILWAY MARKET OUTLOOK THIS WEEK

a RAILWAY AGE Workbook Page

Carloadings Down.—Loadings of revenue freight in the week ended June 30 totaled 755,292 cars, the Association of American Railroads announced on July 5. This was a decrease of 44,169 cars, or 5.5%, compared with the previous week; an increase of 59,451 cars, or 8.5%, compared with the corresponding week last year; and an increase of 136,733 cars, or 22.1%, compared with the equivalent 1954 week.

Loadings of revenue freight for the week ended June 23 total 799,461 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, June 23

District	1956	1955	1954
Eastern	123,898	130,853	113,700
Allegheny	157,890	154,449	131,218
Pocahontas	65,006	59,896	50,138
Southern	127,736	122,500	116,476
Northwestern	127,844	132,781	115,451
Central Western	133,388	131,905	125,102
Southwestern	63,679	62,043	61,075
Total Western Districts	324,911	326,729	301,628
Total All Roads	799,461	794,427	713,160
Commodities:			
Grain and grain products	61,697	58,220	63,928
Livestock	6,055	5,525	5,458
Coal	143,165	130,303	119,472
Coke	12,190	11,771	7,396
Forest Products	48,101	48,201	37,910
Ore	87,726	87,579	71,588
Merchandise l.c.l.	58,960	57,393	60,574
Miscellaneous	381,567	385,235	346,834
June 23	799,461	794,427	713,160
June 16	801,431	779,957	707,237
June 9	787,075	781,938	697,583
June 2	719,209	709,351	612,314
May 26	788,297	785,589	689,292
Cumulative total, 25 weeks	18,172,120	17,184,253	15,883,267

New Equipment

PASSENGER-TRAIN CARS

► *Union Pacific.*—Ordered 15 baggage cars and 35 mail storage cars, ACF Industries; estimated cost $3,500,000; delivery expected second quarter 1957.

LOCOMOTIVES

► *Northern Alberta.*—Will start dieselization early next year with purchase of five diesel-electric units costing estimated $1,000,000.

New Facilities

► *Canadian National.*—Will spend $8,300,000 this year for Western Region track maintenance; new construction projects in the region include: additional signalling ($5,000,000); extending and relocating sidings ($350,000); improved yard facilities at Port Arthur, Ont., Jasper, Alta., and Transcona, Man. ($1,200,000); installation of bunker "C" and diesel fueling facilities at two points ($135,000); Zeolite water softening facilities at five points ($110,000); oil fired boilers in Regina, Sask., engine house ($46,500); electrical shop at Transcona ($380,000); new wheel shop at Vancouver, B. C. ($56,000); grit blast plant and freight car paint shop at Transcona ($1,100,000); extension of viaduct at Winnipeg, Man. ($800,000); and replace scales at two points ($80,500).

► *Chicago & Eastern Illinois.*—Will consolidate its three Terre Haute, Ind., freight yards into one new yard south of the city limits; project, which will include a new freighthouse and diesel servicing facility, is scheduled for completion early in 1957; estimated cost $750,000.

► *New Haven.*—Is negotiating sale of its 10-acre freight yard at New Rochelle, N.Y., for $1,000,000 to a redevelopment firm which would construct hotel and shopping center in conjunction with new passenger depot and parking lot, for $17,000,000; station would become major stop for through and commuter trains; new freight yard would be built at nearby site to be bought for $500,000; details still to be settled include arrangements under which road will own station portion of development, and how much parking space should be allotted to railroad patrons.

► *Union Pacific.*—Will install improved passenger platforms and high speed train servicing facilities at North Platte, Neb.; platforms will be lengthened and resurfaced with asphalt and concrete; trackage, fuel, water and drainage facilities will be relocated; estimated cost $135,000.

► *Western Pacific.*—Reports following construction projects: replace four miles of 100-lb rail with 119-lb rail between Sage, Nev., and Luke (cost $175,000); replace 302 linear ft of timber trestle with concrete lining in main line tunnel 32 at Keddie, Cal. ($130,000), contractor Utah Construction Co.; replace 1,025 linear ft of timber trestle with concrete lining in tunnel No. 1 at Niles, Cal. ($380,000).

(Continued from page 8)

earn nearly four days basic pay in little over 12 hours and for a fireman to earn up to 38 days basic pay in only a single month of freight service, and up to 48 days pay in only a single month of passenger service.

1955 Diner Dollars Cost $1.04-$1.83

Railroads in 1955 paid from $1.04 to $1.83 for each dollar collected in revenues for diner and buffet services. The figures, published by the ICC's Bureau of Transport Economics and Statistics in its "Transport Economics," cover 21 roads which had 1955 diner and buffet revenues or expenses in excess of $1,000,000.

As reported in Railway Age of June 25, page 5, the average cost of diner dollars to all Class I roads in 1955 was $1.40, i.e., the ratio of diner and buffet expenses to revenues from the services was 140.3. The 1954 ratio was 143.9. Expense figures include only direct costs, nothing for transporting dining cars or general overhead.

The $1.04 figure was the New Haven's, its 1955 expense-to-revenue ratio having been 104.2. The $1.83 figure was the Union Pacific's, its ratio having been 182.5.

Last year's diner and buffet revenues of the Pennsylvania and New York Central were $9,009,000 and $8,088,000, respectively — substantially greater than those of any other road shown. Their 1955 ratios were 119.6 and 118.3, respectively. The accompanying table is the ICC bureau's 21-road compilation.

Dining and Buffet Revenues and Expenses of Class I RRs

(Dollar items in thousands)

District, region and railway	Dining and buffet revenues (Account No. 131)		Dining and buffet expenses (Account No. 441)		Ratio of expenses to revenues (Per cent)	
	1954	1955	1954	1955	1954	1955
EASTERN DISTRICT:						
New Haven	$2,872	$2,937	$ 3,071	$ 3,061	106.9	104.2
New York Central	8,511	8,088	10,319	9,569	121.2	118.3
Baltimore & Ohio	2,510	2,495	3,661	3,603	145.9	144.4
Pennsylvania	9,315	9,009	11,204	10,775	120.3	119.6
POCAHONTAS REGION:						
Chesapeake & Ohio	1,049	1,095	1,570	1,565	149.6	142.9
SOUTHERN REGION:						
Atlantic Coast Line	2,017	1,803	2,450	2,206	121.5	122.5
Louisville & Nashville	963	808	1,334	1,133	138.5	140.2
Illinois Central	1,714	1,730	2,353	2,358	137.3	136.3
Seaboard Air Line	1,258	1,375	1,831	1,914	145.6	139.2
Southern	1,706	1,598	2,126	1,975	124.6	123.6
WESTERN DISTRICT:						
Chicago & North Western	1,976	1,913	3,322	2,930	168.1	153.2
CMStP&P	1,964	1,793	2,933	2,734	149.3	152.5
Great Northern	1,612	1,615	2,860	2,713	177.4	168.0
Northern Pacific	1,207	1,226	1,714	1,710	142.0	139.5
AT&SF and affiliated cos.	6,327	6,143	11,022	10,208	174.2	166.2
CB&Q	2,195	2,251	3,201	3,327	145.8	147.8
CRI&P	1,817	1,777	2,917	2,867	160.6	161.4
Southern Pacific	5,364	4,723	7,944	6 831	148.1	144.6
Union Pacific and leased lines	4,887	4,583	9,943	8,362	203.5	182.5
Missouri Pacific	1,077	1,031	1,247	1,201	115.8	116.5
Texas & New Orleans	812	676	1,201	1,017	147.9	150.5

B&O "TOFCEE" Stretches to New York

Baltimore & Ohio "TOFCEE" service to New York City was inaugurated July 2, bringing to 14 the number of base areas reached by the B&O's piggyback operations.

The new extension provides service between New York and the key cities of Youngstown, O., Akron, Cleveland, Toledo, Cincinnati, Louisville, Indianapolis, Chicago and St. Louis-East St. Louis.

Also on July 2, the B&O joined with the Jersey Central to provide trailer-on-flat-car service between 32 stations in northern New Jersey and the key points covered in the extension to New York. This traffic will move via the Reading and the B&O and Jersey Central. In all, 134 separate city-to-city services are now operated by the B&O from the 14 base areas in operation, compared with six base areas and 14 city-to-city services when the road's trailer-on-flat-car operations began in 1954.

Railroads Will Increase Demurrage Rates August 1

A tariff making increased demurrage rates effective August 1 has been filed at the Interstate Commerce Commission by the railroads. It was a surprise to shipping interests who expected the increases would be delayed until September 1.

The increased charges, and other changes which the tariff makes in demurrage rates, were approved by a vote of car-owning railroads. The vote was ordered by the board of directors of the Association of American Railroads (Railway Age, June 4, p. 14).

The new rates will be $4 for each of the first two days after the free-time allowance, $7 for each of the next two chargeable days, and $10 per day thereafter. There will be no change in the free-time allowance of 48 hours.

Other changes will reduce, from four to two, the number of credits useable to offset debits under average agreements. And Saturdays,

Engineer for a Day

Nine-year-old Ralph Peters Hubbell, Jr., receives his "honorary engineer" card from Long Island President Thomas M. Goodfellow. Looking on is the real engineer, Charles M. Coyne, with whom young Ralph rode as an "engineer-for-a-day" in the LI's new program of giving monthly commuters a chance to ride up in the cab. Master Hubbell—who for the past year has been a regular commuter from his Garden City home to school in New York City—is the great grandson of Ralph Peters, president of the road for 18½ years until his death in 1923.

Sundays and holidays will be charged against straight-plan cars on the same basis as they are now charged against average-agreement cars, i.e., unless they occur prior to or during free time.

Senator Threatens Car Quota Bill

Senator Magnuson, Democrat of Washington, who is chairman of the Senate Committee on Interstate and Foreign Commerce, has indicated that he might sponsor legislation directing the Interstate Commerce Commission to work out a quota plan showing how many freight cars each railroad should own and requiring ownership on that basis.

The senator issued a July 2 statement saying "it may become necessary" for Congress to do that if "eastern railroads" continue to oppose legislation designed "to alleviate the annual freight car shortage by forcing return of box cars to the owner railroads during periods of critical shortage."

Distasteful—"Our producers," the senator said, "deserve ample shipping service and, if it becomes necessary, I think Congress might want to consider having the ICC prepare a table showing just how many freight cars each railroad should own and then enact legislation to see that each constructs its full quota. It would be distasteful to impose a quota, but if that is the only way we can avoid a critical shortage of box cars each year I would be disposed to give it serious consideration."

The legislation, which the senator said "eastern" roads oppose, is that proposed in his bill, S.2770, to give the ICC power to impose penalty per diem and thus use the freight-car-rental rate as an instrument to promote prompt movement of cars. At hearings on the bill, an opposition statement was presented by President J. M. Symes, president of the Pennsylvania, who spoke also for 10 other roads, including such non-eastern lines as the Southern Pacific, Texas & New Orleans, Union Pacific, Missouri Pacific, and Chicago & North Western. Meanwhile, nine roads, including the Chesapeake & Ohio, favored the proposed legislation (Railway Age, May 14, p. 13).

The ICC's support of the legislation was set out in a statement which revealed how the commission would proceed if it got the proposed new power. It would adopt a car-ownership formula which would put it in a position "to exert pressure upon deficit railroads to increase their ownership to the prescribed level within a reasonable time or suffer penalty per diem charges in the event of another car shortage" (Railway Age, April 16, p. 13). The National Industrial Traffic League is on record in opposition to the bill.

Another recent Magnuson action was a letter he sent to Chairman Arpaia of the ICC, asking that the Senate committee be kept currently informed about the freight car situation. He wants monthly reports, showing separately for each Class I road the following information: Ownership, retirements, installations, cars on order and orders cancelled.

National Safety Council's 1955 Safety Winners

Six railroads have been named group winners of the Railroad Employees' National Safety Award of the National Safety Council. During 1955 these roads had an employee casualty rate 56% less than the

average rate for all Class I carriers.

The 1955 combined rate of employees killed and injured per million man-hours worked was 3.34 for the six winners, compared with 7.60 for all Class I railroads.

First place winners and their rates were:

(1) Great Northern (in the category 50 million or more man-hours worked), accident rate 3.12, compared to group average of 6.64; (2) Texas & New Orleans (20 to 50 million man-hours group) rate of 3.87, compared to group average of 6.90; (3) Denver & Rio Grande Western (8 to 20 million man-hours) 3.02, with group average of 8.35; (4) Bessemer & Lake Erie (3 to 8 million man-hours) 3.14, compared with group average of 8.88; (5) Peoria & Eastern (1 to 3 million man-hours) 2.71, compared with group average of 12.01; (6) Texas & Northern (less than 1 million man-hours) a zero rate, compared with group average of 12.90.

Among divisions of the Pullman Company, the Southwestern Region operations had the best record, while among Pullman shop units, the Richmond, Cal., shop was the winner. Among switching and terminal railroads, the Ogden Union Railway & Depot Co. was winner in the group whose employees worked more than 1,500,000 man-hours, while the New Orleans Terminal Company won among roads working fewer than 1,500,000 man-hours.

Loading Forecast Sees 22 Groups Up

The third-quarter carloading forecast of the 13 regional Shippers Advisory Boards reflects predictions that loadings in 22 commodity groups will be above those of last year's third quarter while loadings in 10 groups will be down. As reported in Railway Age of July 2, page 5, the general prediction is that total loadings will be up 4.4%.

On the basis of the estimate, loadings of the 32 principal commodities will be 8,155,399 cars in the third quarter of 1956, compared with 7,815,010 in the same 1955 quarter for the commodities listed.

Each of the 13 boards, except the Great Lakes Board, estimated an increase in the third quarter of 1956, compared with the same 1955 period.

SHIPPERS ADVISORY BOARD	ACTUAL LOADINGS THIRD QUARTER 1955	ESTIMATED LOADINGS THIRD QUARTER 1956	PERCENT INCREASE
New England	106,743	113,999	6.8
Atlantic States	717,308	764,147	6.5
Allegheny	859,609	935,313	8.8
Ohio Valley	1,014,585	1,067,834	5.2
Southeast	882,244	944,574	7.1
Great Lakes	667,931	662,771	0.8 dec.
Central Western	254,714	263,771	3.6
Mid-West	891,097	926,189	3.9
Northwest	806,662	816,638	1.2
Trans-Missouri-Kansas	398,779	404,406	1.4
Southwest	509,782	516,891	1.4
Pacific Coast	401,244	433,194	8.0
Pacific Northwest	304,312	305,272	0.3
TOTAL	7,815,010	8,155,399	4.4

The tabulation shows actual loadings for each district in the third quarter of 1955, estimated loadings for the third quarter of 1956, and percentage of change.

C&EI Rail Diesel Car Pulls a Trailer

This RDC-1 with its streamlined trailer provides the necessary flexibility to meet traffic requirements of the Chicago & Eastern Illinois' Chicago-West Vienna, Ill., "Meadowlark." The single RDC makes the 680-mile round trip on weekdays and pulls the trailer on weekends. "It doesn't cost us much extra to handle the trailer," a C&EI spokesman told Railway Age. The trailer is a regular streamlined lightweight coach equipped with propane gas heater. Vending machines in the RDC provide "snack" service.

Shannon Is New Assistant Locomotive Inspection Chief

Howard H. Shannon is the new assistant director of locomotive inspection at the Interstate Commerce Commission. He took his oath of office last week, a few days after the Senate confirmed his appointment by President Eisenhower.

Mr. Shannon has been a member of the commission's staff of locomotive inspectors with headquarters in New Jersey. In the assistant directorship he succeeded James E. Friend, who returned to the field staff as district inspector at Fort Worth, Tex., several months ago (Railway Age, Mar. 5, p. 4). The other assistant directorship has been vacant since March 31, 1954, when Allyn C. Breed retired.

Benton Continues As ICC Reefer Agent

Fifth Revised ICC Service Order No. 95 has been modified by Amendment No. 5, which set back the expiration date for another year—until June 30, 1957. The order makes D. W. Benton the commission's adviser on matters relating to refrigerator cars.

IC and SP Cited by Management Institute

The Illinois Central and Southern Pacific have been cited by the American Institute of Management for "outstanding performance in vital management areas."

IC won institute recognition for its "growth, reputation and contribution to the national economy, for astute financial planning and programs, along with effective internal control systems, and for exceptional sales success." Also, the IC was commended for "the degree to which effective management" in sales work "aided the entire effort."

SP was similarly singled out for its "fiscal policies and for the selection, active participation and contributions of its board members." Also drawing praise were SP's "note-

worthy production record, obtained through both prudent employment of physical facilities and healthy employee relations," and "the quality of its executive personnel, unity of command, executive training and the general harmony present" which, the institute said, "have all contributed to overall excellence."

Lumber Banding Plan To Be Modified

A proposed new method of loading lumber on flat cars that uses high tension steel bands must be modified before it can be accepted by the Association of American Railroads. The method would do away with expensive side stakes now required when lumber is shipped on a flat car.

The AAR committee studying the new system asked for revisions after conducting a series of shock tests in the Southern Pacific's West Oakland, Cal., yards. W. B. Medill, general master car repairer in the SP's motive power department at San Francisco, and a member of the AAR committee, has been delegated to conduct further shock tests.

Northwestern U. Transport Center to Open Next Fall

The new Transportation Center at Northwestern University will open next fall. John A. Logan, professor of civil engineering at the Northwestern Technological Institute, has been named associate director of the center, Franklin B. Kreml, director, announced. Professor Logan will supervise the educational, research and other operational activities of the center, which was established in 1954 (Railway Age, Jan. 4, 1954, p. 11).

ICC Upholds Division On UP Rail-Truck Rates

The Interstate Commerce Commission has affirmed a ruling by its Division 2 which held that railroads may publish joint rail-motor rates under provisions of the Interstate Commerce Act.

The commission's decision came in a report on reconsideration of the case (No. 31586) involving tariffs covering piggyback services of the Union Pacific (Railway Age, Dec. 26, 1955, p. 10).

Supply Trade

T. B. Thompson, Pittsburgh district manager, **Union Switch & Signal - Division of Westinghouse Air Brake Company,** has been appointed Chicago district manager, succeeding **J. W. Hansen,** named manager of advertising and publicity at Swissvale, Pa. **M. W. Waller,** sales engineer, New York district, has been appointed district manager.

R. Tom Sawyer, research manager, **Alco Products, Inc.,** has been appointed consultant on engineering and development problems. In addition, he will become a consultant to the staff of the Experimental Towing Tank at Stevens Institute of Technology, where he will work on various Army development projects.

Hugh Piper, formerly with **Hillsman Equipment Company,** has joined **American Hoist & Derrick Co.** as a special sales engineer serving railroads with Chicago terminals.

William M. Tetrick has been elected president, **Avis Rent-a-Car System,** succeeding **Richard S. Robie,** resigned. **Fred A. Mudgett** has replaced Mr. Tetrick as vice-president in charge of passenger car operations and also heads the Avis licensee division.

Edward L. McCabe, sales engineering supervisor, **Electric Storage Battery Company,** has been appointed assistant sales manager, Philadelphia branch. **George L. Nicholls,** resident representative, Portland, Ore., has been named branch manager at Seattle.

Financial

Dividends Declared

ATCHISON, TOPEKA & SANTA FE.—$1.25 quarterly, payable September 1 to holders of record July 31.

ATLANTA & CHARLOTTE AIR LINE.—$4.50, semiannual, payable September 1 to holders of record August 20.

CANADA SOUTHERN.—$1.50 (payable in Canadian funds, tax deductible at the source, non-resident tax 15%, resident tax 7%), semiannual, payable August 1 to holders of record July 12.

CAROLINA, CLINCHFIELD & OHIO.—$1.25, quarterly, payable July 20 to holders of record July 10.

CHESAPEAKE & OHIO.—common, 87½¢, quarterly, payable September 20 to holders of record September 4; 3½% convertible preferred, 87½¢, payable November 1 to holders of record October 5.

CLEVELAND & PITTSBURGH. — 4% guaranteed, 50¢, quarterly; 7% guaranteed, 87½¢, quarterly; both payable September 1 to holders of record August 10.

DELAWARE, LACKAWANNA & WESTERN.—Stock dividend of two shares of Nickel Plate for every 33⅓ shares of DL&W stock held, paid July 2 to holders of record May 31. Stockholders with fewer than 33⅓ shares of Lackawanna stock will receive a dividend at the rate of $1.81 a share; fractional payments to other stockholders will be at same rate; this distribution of Lackawanna's NKP holdings accounted for less than 100,000 shares of the road's more than 700,000 shares of NKP stock.

ERIE & PITTSBURGH. — guaranteed, 87½¢, quarterly, payable September 10 to holders of record August 31.

LAKE SUPERIOR & ISHPEMING.—35¢, quarterly, payable July 16 to holders of record July 2.

LEHIGH VALLEY.—30¢, quarterly, payable August 20 to holders of record August 3.

LOUISVILLE, HENDERSON & ST. LOUIS.—5% non-cumulative preferred, $2.50, semiannual, payable August 15 to holders of record August 1.

MAHONING COAL.—common, $7.50, quarterly, paid July 3 to holders of record June 29; 5% preferred, $1.25, semiannual, paid July 2 to holders of record June 29.

NORFOLK & WESTERN.—common, 75¢, quarterly, payable September 10 to holders of record August 13; 4% adjustment preferred, 25¢, quarterly, payable August 10 to holders of record July 19.

PENNSYLVANIA.—35¢, quarterly, payable September 10 to holders of record August 6.

PHILADELPHIA, GERMANTOWN & NORRISTOWN.—$1.50, quarterly, payable September 4 to holders of record August 20.

PITTSBURGH & LAKE ERIE.—$1.50, quarterly, payable July 16 to holders of record July 3.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—7% preferred, $1.75, quarterly, payable September 3 to holders of record August 20.

PROVIDENCE & WORCESTER.—$2.50, quarterly, paid July 2 to holders of record June 22.

READING.—50¢, quarterly, payable August 9 to holders of record July 12.

WESTERN PACIFIC.—2% common stock dividend on no par common stock (at the rate of one share for each fifty shares held), payable August 3 to holders of record July 6; 75¢, quarterly, payable August 13 to holders of record August 1.

More Microwave

This time it's in California's San Bernardino mountains. The Santa Fe is going to install microwave to provide a telephone circuit from Cushenbury (see map), end of a newly constructed 30-mile branch, to the main line at Victorville and on to San Bernardino. Terminal stations will be at San Bernardino and Cushenbury, with repeaters at Victorville and Crestline (on a mountain top). In addition to the telephone circuit, a wayside radio station at Victorville will be controlled from San Bernardino over this microwave system. The microwave equipment is being furnished by the Collins Radio Company, Dallas, Tex.

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With Redipak there's *no waste whatever*—loose or otherwise—to work up, pack down, or cause waste grabs and resulting hot boxes.

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But why take our word for Redipak's remarkable performance? Start testing them *now* . . . under your own operating conditions . . . and *see for yourself!*

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One man can insert an oil-soaked Redipak lubricating pad in just a few seconds. The square, symmetrical Redipak can be installed either face up, any side out . . . by hand, or with the Redipaker as shown above.

HOW EASY IT IS TO REMOVE!

Just hook the grommets, rock the Redipak lubricating pad back and forth a few times, and out it comes.

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Redipak pads have been tested and proven in our special journal bearing laboratory and in hundreds of thousands of miles of road service.

J. E. McLeod

E. A. Kuhn

C. V. Cowan

Railway Officers

CHESAPEAKE & OHIO.—C. A. Taylor, senior vice-president at Richmond, retired June 30. **R. N. Begien, Jr.,** staff assistant to vice-president—operations, at Richmond, appointed assistant vice-president—operations at that point and will serve as principal assistant and on-line executive representative of **M. I. Dunn,** whose appointment as vice-president—operations was noted in Railway Age, July 2, p. 42. **E. T. Rucker, R. G. Vawter** and **C. J. Millikin** appointed regional managers of the Eastern, Central and Northern regions, respectively. **J. E. McLeod,** chief mechanical officer at Richmond, appointed staff assistant to vice-president—operations, at Cleveland, and will be responsible for system-wide recruitment and management development activities of the operating department and for staff assistance to vice-president—operations in mechanical matters. **E. A. Kuhn,** general superintendent motive power and machinery, Richmond, named chief mechanical officer there, with system responsibility for maintenance and construction of locomotives and cars. **T. F. Burris,** chief engineer, Southern region, Richmond, appointed chief engineer—system, Huntington, with system responsibility for construction and maintenance of roadway and structures, signals, communications, and water supply. **C. V. Cowan,** superintendent freight transportation, named general superintendent transportation at Richmond, with system responsibility for freight and passenger transportation, car accounting and distribution, and development of computer applications and car movement information center. **W. K. Weaver, Jr.,** superintendent, Cincinnati—Chicago division, at Covington, Ky., named assistant to vice-president—operations, Cleveland. **D. S. Bradley,** superintendent of computer center, appointed assistant general superintendent—computer applications, Richmond, and will be staff and executive assistant to general superintendent computer applications.

CHICAGO & EASTERN ILLINOIS.—Robert Brandt, traveling freight agent, appointed general agent at Louisville, Ky., succeeding **Ben Johnston,** retired.

COTTON BELT.—Keith Hudgins, commercial agent at Kansas City, Mo., appointed general agent at Denver, succeeding **W. J. Donahue,** deceased.

KANSAS CITY TERMINAL.—L. E. Vincent appointed trainmaster in charge of passenger and freight operations.

LOUISVILLE & NASHVILLE.—Howard C. Forman, assistant chief engineer at Louisville, Ky., appointed chief engineer there, succeeding the late **L. L. Adams** (Railway Age, May 14, p. 74). Mr. Forman's successor is **G. R. Sproles,** assistant engineer-miscellaneous — chief engineer's office at Louisville, who in turn is replaced by **Claude Johnston,** division engineer at Birmingham, Ala.

A. Edward Lee appointed freight traffic agent, Kansas City, Mo., succeeding **Serl R. Christensen,** retired.

James J. Elder, executive assistant at Louisville, Ky., retired July 1. **Zenos E. Scott, Jr.,** chief clerk to president, appointed an assistant to president.

MILWAUKEE. — L. V. Anderson appointed assistant to vice-president—operation, in charge of claim prevention, refrigerator and merchandise service at Chicago, succeeding **W. L. Ennis,** retired. Mr. Anderson formerly was assigned to operating department duties at Chicago. **W. R. McPherson,** assistant to general superintendent transportation, named superintendent of transportation-passenger, to replace **Granger Smith,** retired. **K. W. Leigh,** chief clerk, transportation department, succeeds Mr. McPherson.

E. C. Barnes, assistant engineer, electrification department at Seattle, Wash., appointed electrical engineer there, succeeding **Laurence Wylie,** retired.

(Continued on page 52)

R. N. Begien, Jr.

E. T. Rucker

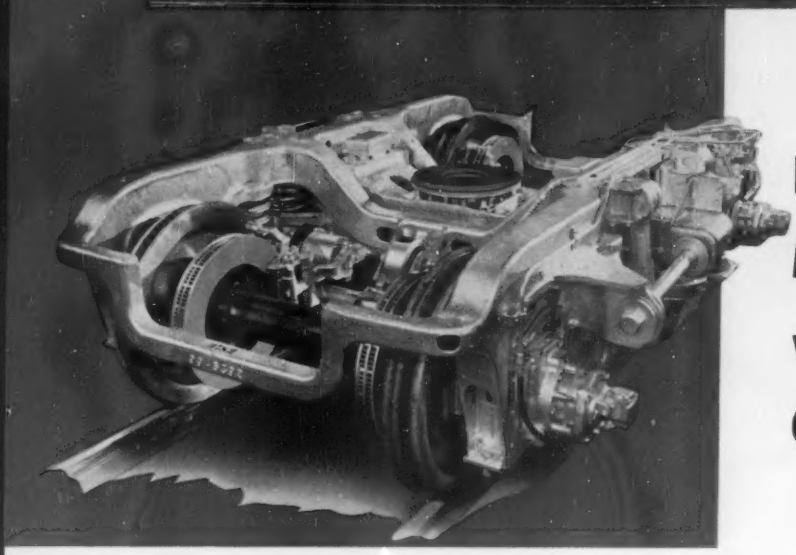
R. G. Vawter

C. J. Millikin

All New "Hi-Level" Cars

for the Santa Fe El Capitan with Commonwealth Trucks and Central Bearings

Built by The Budd Company



Provide a Smoother, More Enjoyable Ride with Increased Operating Economy

The famous Santa Fe chair car train, El Capitan, will be completely equipped with newly designed "Hi-Level" equipment, each train consisting of seven chair cars, a diner and lounge car. All these cars will ride on Commonwealth *Outside Swing Hanger* Trucks of latest design including *Central Bearings*. These features emphasize increased passenger comfort and lowest operating cost.

Commonwealth Trucks with outside spring suspension assure better, smooth riding at all speeds —simplify inspection and upkeep. Central Bearings eliminate truck shimmy and side bearing problems, increase mileage between wheel turnings and substantially decrease costs.

More and more leading railroads are using Commonwealth Outside Swing Hanger Trucks and Central Bearings for new as well as existing passenger cars to improve travel comfort and reduce maintenance expense.

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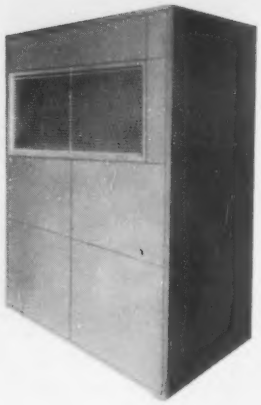

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- a compact, floor mounted unit for direct current operation.
- a new concept of low cost air conditioning for passenger cars now equipped with obsolete mechanical units or ice-cooling units.
- the solution for car remodeling programs where existing car structure would make other types of air conditioners impractical.

The "SAFETY" CEILING TYPE AIR CONDITIONER...

- for installation in coffee and dining cars, baggage-postal cars and rapid transit cars.
- occupies no revenue space.
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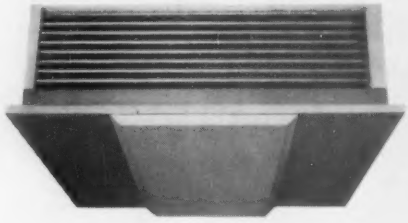
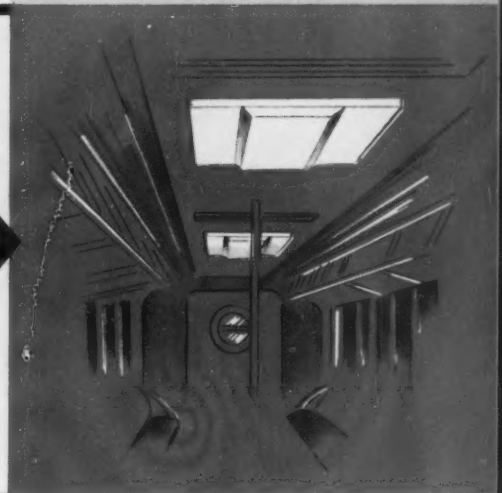
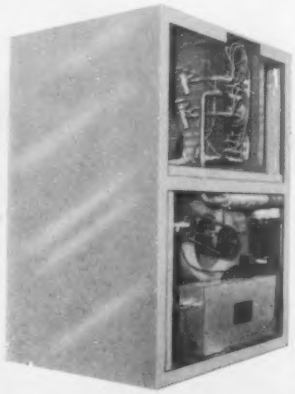
- is ideal for installation where under-car or floor mounted units would be impractical.







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- for alternating current operation on lightweight cars.
- designed for location in the space above the wheel well, on cars with a low floor level.

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"SAFETY" PRODUCTS INCLUDE: Air-conditioning Equipment • Genemotors • Generators • Fans • Regulators • Blower Units
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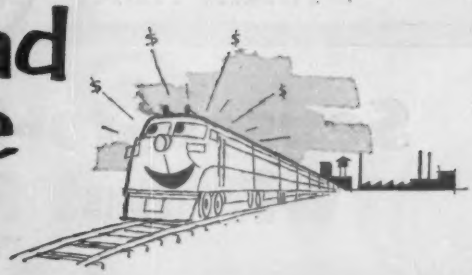
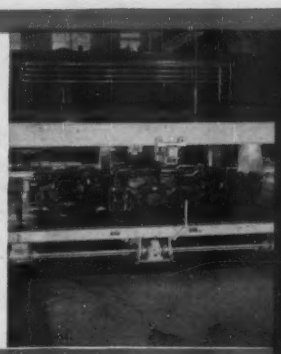


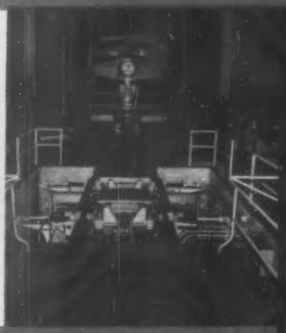
Faster, Lower Cost Truck and Wheel Changes

Whiting Drop Tables reduce lay-up time from days to hours. They save manpower on truck and wheel changes and help assure uninterrupted, profitable operation. Capacities range from 10 to 150 tons—designed to the requirements of the most modern Diesel, electric or steam shops. Write today for Bulletin DT-C-404.



Accurate, Economical Wheel Grinding

The Whiting Wheel Grinder provides a fast, accurate short-cut to restoring proper wheel contour—without removing the wheels. No need to open axle bearing housings—or to remove a single nut or bolt. Eliminates costly wheel removal, truing and replacement. Write for Bulletin MS-C-401.

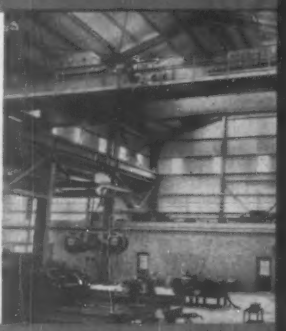


Safer, Easier Lifting

Whiting Electric Portable Jacks put ton-moving muscles at your fingertips. There's a type for every need . . . from special lifters, to all-purpose pit jacks. Tenders, cars, switchers or locomotives . . . all are lifted more safely and at lower cost. Whatever your requirements—from 25 to 80 tons—get in touch with Whiting. Write for Bulletin PJC-403.

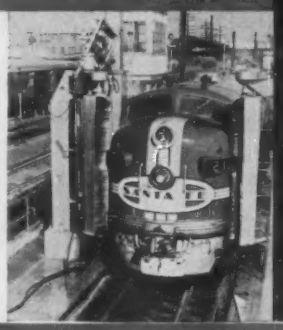
Heavy-Duty Lifting and Moving for the Big Jobs

Whiting Overhead Traveling Cranes lift and move the largest Diesels and even the heavier gas-turbine locomotives quickly and safely. They help put big engines back on the road in record time. There is a Whiting Crane for every requirement . . . a complete range of types and sizes. Write for Bulletin 80.



Gleaming Washes in Minutes

From locomotive to dome-type cars . . . just one operator and a Whiting Train Washer sends an entire train on its way in minutes . . . clean and bright. Cars may pass through a Whiting Washer at the rate of 70 feet per minute. An ordinarily hard-to-clean dome-type car is shining in as little as 75 seconds. Save washing time—cut washing cost, write for Bulletin CW-C-409.



Time-Saving Cross-Over Transport

Whiting Cross-Over Bridges permit fast, easy transport from platform to platform over railroad tracks. They eliminate time-consuming routing around tracks to crossings, and there is no interference with railroad traffic. Complete, uninterrupted movement is possible over the rails and on them. Write for Bulletin MS-C-400.

Whiting railroad equipment makes possible big savings in repair and maintenance. Shop time is turned into road time! More locomotives and cars will be out on the road — working. Get complete information on one or all of these Whiting products. Send for the bulletins listed above.

WHITING CORPORATION

15603 Lathrop Avenue • Harvey, Illinois

WHITING

EQUIPMENT FOR RAILROADS

A SHOW TOO GOOD TO MISS!

STARRING

TRACK SUPPLY

BRIDGE AND BUILDING SUPPLY

THE 1956 JOINT EXHIBITION
SEPTEMBER 17-18-19-20
in Chicago!

Held during the ROADMASTERS' and BRIDGE AND BUILDING CONVENTIONS.

CONVENTION HEADQUARTERS:
Conrad Hilton Hotel

EXHIBIT HEADQUARTERS:
The Coliseum

You and your staff shouldn't be any place but Chicago Sept. 17-20. Everyone else will be there!

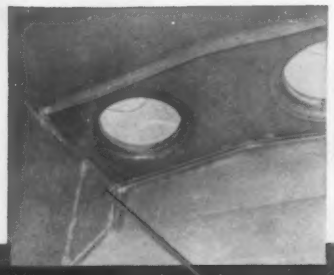
NEW IDEAS, NEW PLANS, NEW DESIGNS WILL BE DISCUSSED IN THE MEETINGS—AND NEW PRODUCTS, NEW TECHNIQUES, NEW DESIGN AND CONSTRUCTION CAN BE SEEN IN PERSON AT THE MAMMOTH EXHIBIT AT THE COLISEUM!

For information, write:

TRACK SUPPLY ASSN. • BRIDGE AND BUILDING SUPPLY ASSN.

ROOM 705 • 59 E. VAN BUREN STREET • CHICAGO 5, ILLINOIS

entrust bulk lading to



Clean Smooth Interior
All-welded design of interior eliminates pockets, ledges, and rivet heads thus speeding unloading, reducing corrosion, and making car cleaning easy. Floor sheets have proper slope for high capacity, fast unloading.

PS-2 Sides
PS-2 Sides are designed to stay new looking longer due to 4″ overhang of bulb angle side plate. It eliminates the "catch-all" corner and makes the roof easy to clean. Smooth one-piece welded side eliminates corrosion and provides a smooth, clean car interior for fast unloading. Posts and side sheets joined by automatic arc welding.

P-S Hopper Gates
P-S exclusive design and make Hopper Gates are easily operated, positive sealing. Material flow can be reduced or cut off as desired. Hopper chutes are positioned properly for unloading into existing under-track take-away devices. Faster cleaning interior and heavier side sheets reduce sledge hammer damage.

More than 9500 PS-2 Covered Hopper Cars have been ordered or put into service by 46 equipment and value-conscious purchasers. Bulk lading being handled in PS-2s is a wide variety of chemicals, mined products, and foods. For example, the efficient and progress-minded Denver & Rio Grande Western Railroad builds freight traffic by relying on its PS-2's for safe, dry, economical handling of cement, salt, feldspar, fluorospar, perlite, potash, magnesite and ground mineral earths such as filter clays and dolomite.

PS-2

covered hopper cars

Weathertight Hatch and Hatch Cover
Hatch coaming is of one piece pressed steel, welded to car roof sheets. Internal diameter is 2' 6", and coaming rises 6½" above roof surface. Upper lip of coaming curves down to help keep weather out. Hatch cover, of one piece pressed steel, makes tight contact with entire coaming lip. Center pressure locking is simple and positive. When open, cover does not extend over running board.

Weather Tested
Testing is a part of every P-S Standardized Freight Car. And tests assure that the PS-2 meets the carbuilder's expectations for a superior product. Since an important factor in PS-2 design is its ability to shed weather, keeping lading clean and dry, every PS-2 is subjected to a water test. Volumes of water are hose-applied to the junction between hatch coaming and cover, and to the entire car—top to bottom. Interior inspection then reveals any leakage for correction.

The economics of present day rail operation demand consideration for faster, less costly ways of handling dry granular bulk lading. The most advanced freight car designed to fill this railroad-shipper consignee need is the Standardized PS-2 Covered Hopper Car. Built by Pullman-Standard, this car includes many features which concentrate on keeping weather-sensitive bulk lading safe, clean and dry. PS-2 owners and users profit from its rugged construction, dependable low-maintenance service and extra-smooth car interiors. The PS-2's welded construction eliminates material retaining ledges, pockets and rivet heads thus speeding unloading, reducing corrosion likelihood and making car cleaning easy.

PS-2 circular hatches and hatch covers fit tightly to exclude weather and dirt. It is unnecessary for workmen to get near the roof edge to open or close PS-2 hatches. Hatch covers open along the length of the car and do not obstruct the running board. Hatches are located for fast loading and hopper floor sheets are properly sloped for fast unloading.

P-S design rugged cast steel hopper gates are machined to a close fit for ease of operation and tight seal against leakage. Gates deposit lading exactly where wanted for augur or other mechanical take-away devices.

While built with all the strength and quality features expected and found in all Pullman-Standard Standardized Freight Cars, the PS-2 has not overlooked design flexibility to meet specific railroad requirements: it comes in two sizes. The two-hopper PS-2, 2003 cu.ft., has 8 loading hatches, 4 unloading gates. The three-hopper PS-2, 2893 cu.ft., loads through 10 hatches, has 6 unloading gates.

The PS-2 is completely tested and proved . . . in the laboratory for structural excellence, on the production line for quality of workmanship and water tightness, and in service for actual performance.

Like the PS-1 Box Car, PS-3 Open Top Hopper and PS-4 Flat Car, the PS-2 Covered Hopper is helping railroads generate greater freight traffic revenues through new shipper benefits and higher levels of service.

Any Pullman-Standard office will be pleased to provide full information on the PS-2 or any P-S Standardized Freight Cars.

WORLD'S LARGEST BUILDER OF FREIGHT AND PASSENGER CARS

PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

221 NORTH LA SALLE STREET, CHICAGO 1, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON

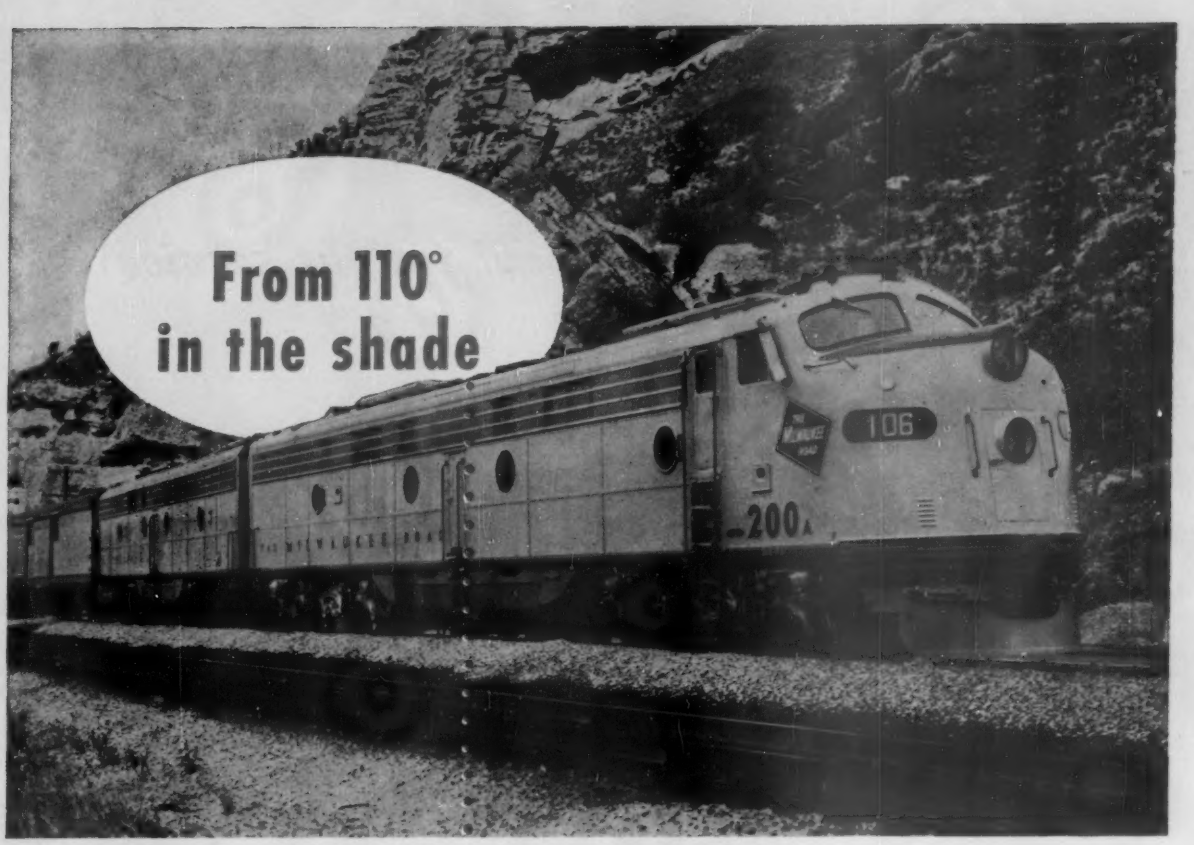
CONGRATULATIONS...*to the Santa Fe Railway for its New Hi-Level Ride*

The Santa Fe Hi-Level Train opens a new era in passenger travel. It provides seats at a new level for everyone far above the train-in-motion track noises . . . and presents the most luxurious appointments and accommodations.

Coach and Car designed and manufactured the light, smartly styled dining chairs on Santa Fe's new Hi-Level EL Capitan.

Coach and Car Equipment Corporation

2860 QUINN STREET • CHICAGO 8, ILLINOIS



to 40° below
PROTECTED BY SINCLAIR

During some of The Milwaukee Road's long runs of over 2200 miles from Chicago to Seattle and Tacoma, altitudes range from sea level to 6000 feet; frequently temperatures vary from 40 below zero to sizzling 110° heat.

It's a tough test for Diesels – and for Diesel lubricating oil. That's why The Milwaukee chooses Sinclair GASCON® Diesel Lubricating Oil to lubricate and protect many of its mighty Diesel engines.

Fact is – over 100 leading U. S. railroads use Sinclair GASCON Oils. Because of this wide popularity, GASCON Oils have become established as a *standard of comparison* for Diesel lubricating oil performance.

It's time that you, too, looked into the advantages of Sinclair GASCON Diesel Lubricating Oils and Diesel Fuels.

SINCLAIR RAILROAD LUBRICANTS

Sinclair Refining Company, Railway Sales, 600 Fifth Avenue, New York 20, N.Y. • Chicago, St. Louis, Houston

TM *on local freight service*

PLANNED *on paper*

More than two and a half years ago, this was the planned performance of Train Master in local freight service—"High tractive effort and dynamic brake ratings to handle heaviest local freights . . . the agility to set out and pick up cars . . . perform local switching at interchange points."

PERFORMED *on the Reading*

Reading Lines

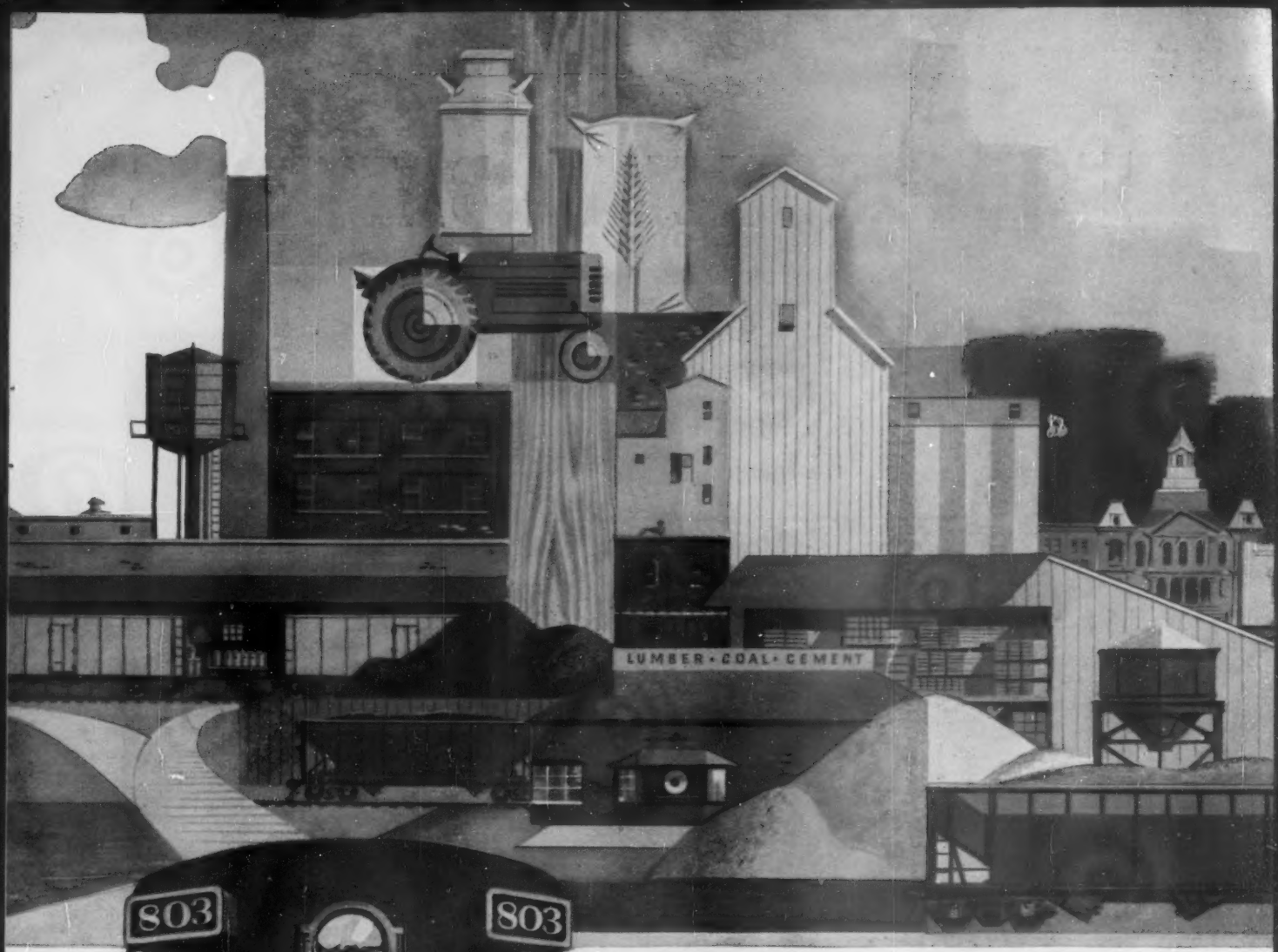
As planned on paper, 2400 horsepower Train Masters provide the right combination of power, traction motor and dynamic braking capacity to handle local freight service—far beyond the ability of a standard road switcher.

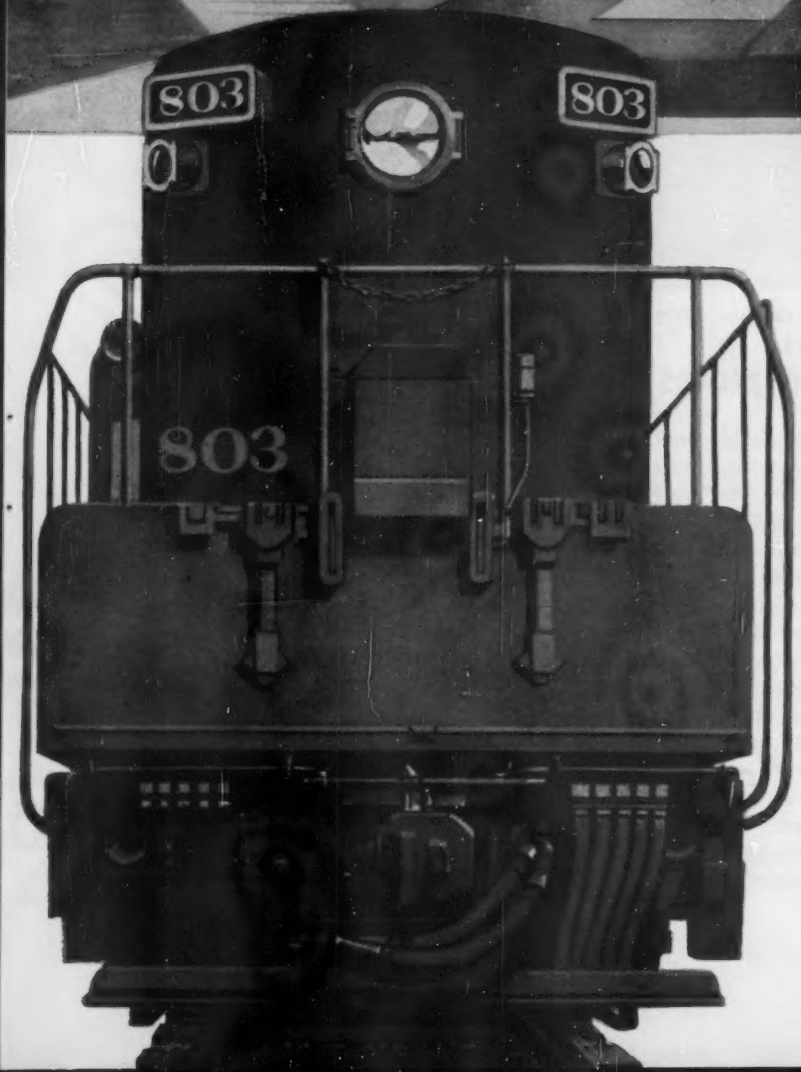
Furthermore, TM's replacing standard units at a ratio of 1 to 2 has effected better utilization of *all* motive power on the road. In addition to local freight, versatile Train Master power handles eight other types of service on a three-trick basis, including yard, drag service, symbol freight, humping, passenger and mine drag service.

FAIRBANKS-MORSE

a name worth remembering when you want the BEST

DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT • ELECTRICAL MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT • MAGNETOS





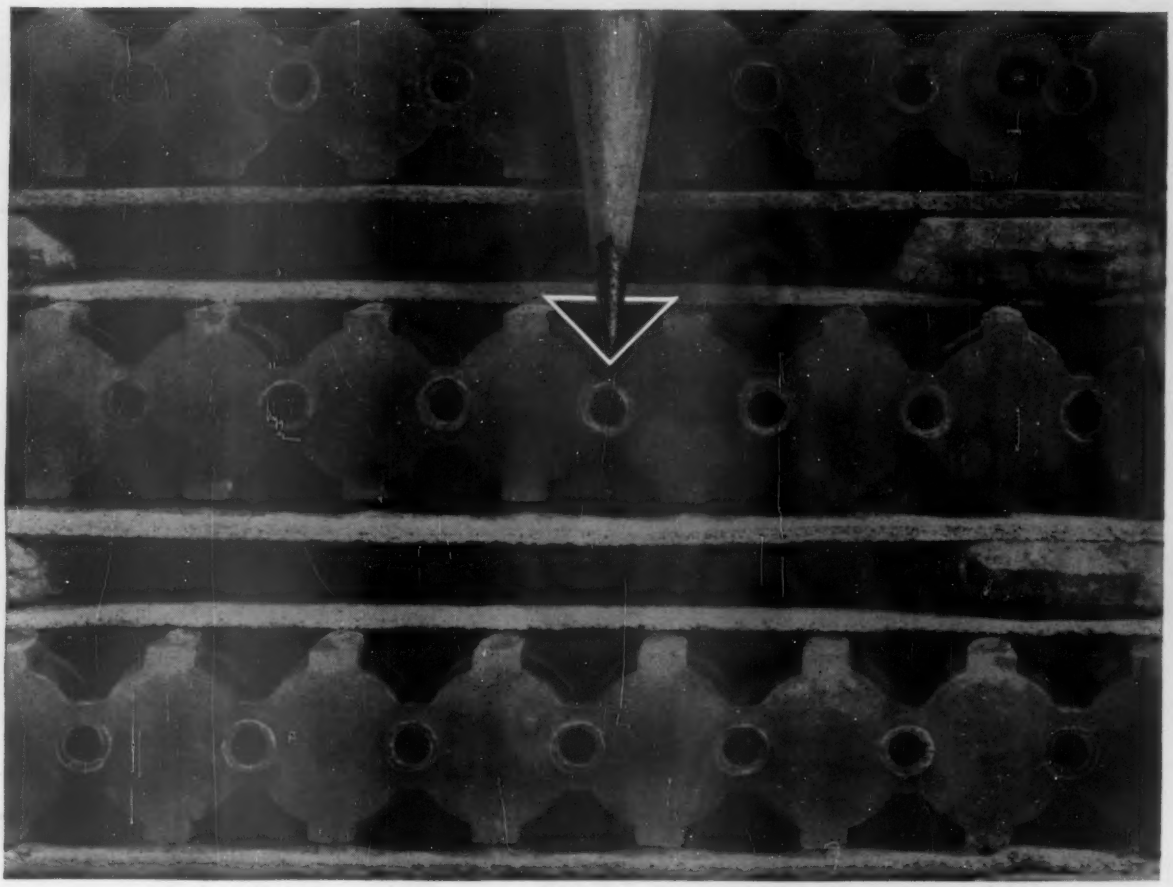
TM

THE PROMISE FULFILLED

If you haven't a copy of the Train Master Booklet, we'll gladly fill your request by return mail. Write: Fairbanks, Morse & Co., Chicago 5, Ill.

EXIDE-IRONCLAD BATTERIES

For railway diesel starting



BOTTOM VIEW shows tubular construction of positive plates in an Exide-Ironclad Battery.

Pools of electrolyte next to plates speed heavy load response

BATTERY FOR RAILWAY DIESEL STARTING. Exide-Ironclad Model MVD. Write for Bulletin No. 5348.

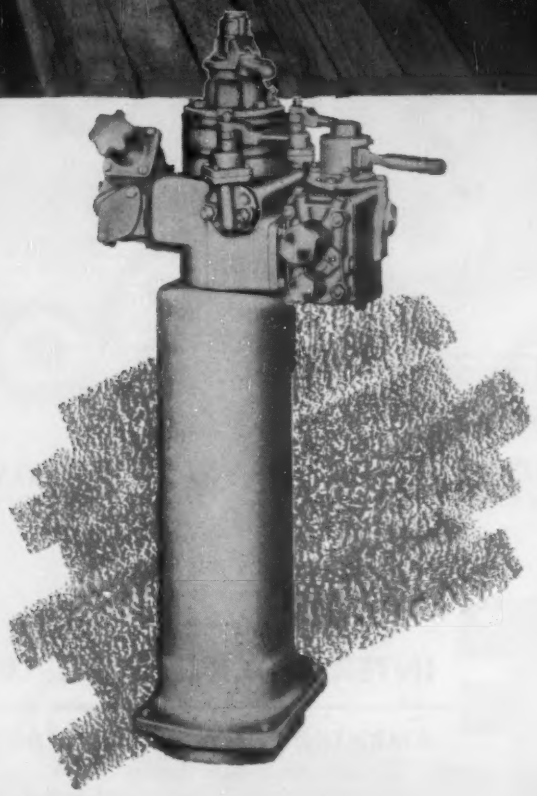
When the man at the control says "More power—fast," the positive plate in the storage battery says "More electrolyte—instantly." That's why the Exide-Ironclad Battery can meet heavy load demands so much more rapidly than other types of batteries. And it's the reason they outperform others in so many uses.

Adjacent to every positive plate in the Exide-Ironclad Battery are these triangular pools of electrolyte standing in reserve. When the call comes for power, the electrolyte is right there where it's needed for swift, sure response. There's nothing to slow down the action. Tiny slits in plastic power tubes let electrolyte in—yet prevent loss of active material. Only the Exide-Ironclad Battery has this construction.

This exclusive feature is only one of the many reasons Exide-Ironclad Batteries have proved so superior in countless applications. When you order batteries for heavy duty service, or the equipment that requires such batteries, be sure to specify Exide-Ironclad. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

Exide®

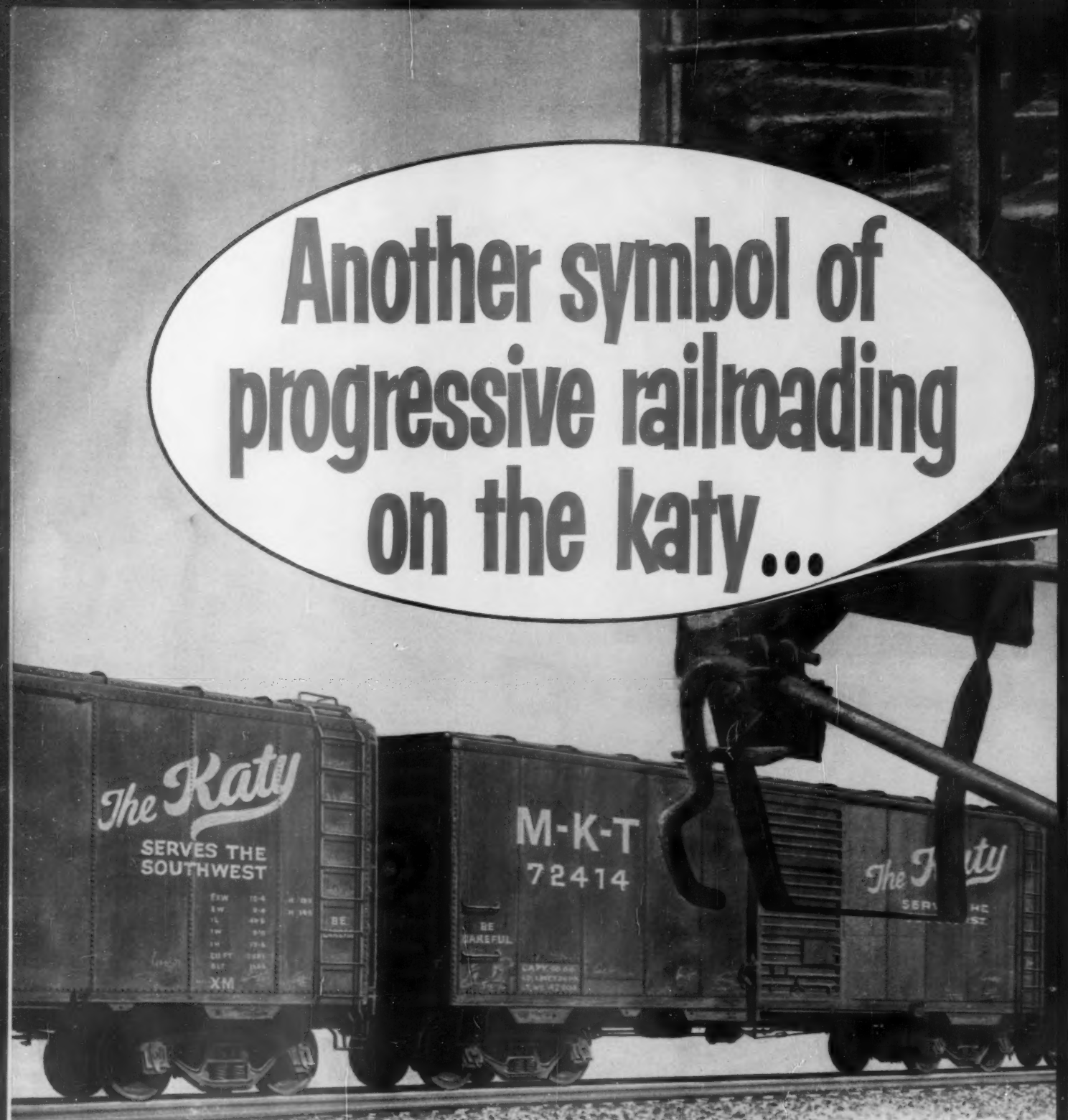
WESTINGHOUSE 6-SL...



the brake that provides for every yard switching requirement

The 6-SL Brake Equipment is designed specifically for the switcher and provides all the basic functions that enable a modern yard switcher to perform with maximum availability.

Westinghouse Air Brake
COMPANY
AIR BRAKE DIVISION • WILMERDING, PENNA.



For passenger car safety at freight car costs

...specify

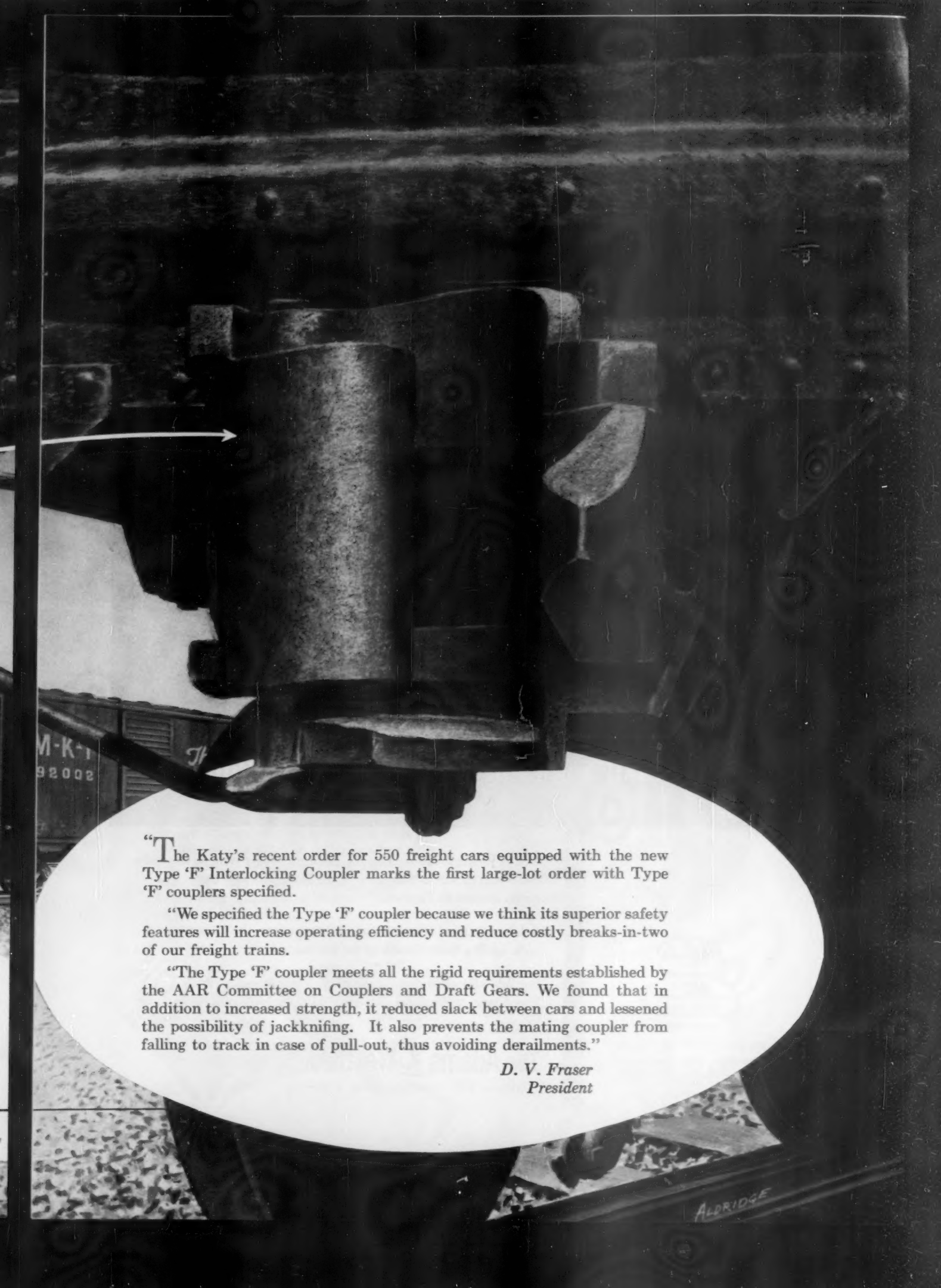
ASF

TYPE "F" INTERLOCKING COUPLERS

AMERICAN STEEL FOUNDRIES

Prudential Plaza, Chicago 1, Illinois

Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec



"The Katy's recent order for 550 freight cars equipped with the new Type 'F' Interlocking Coupler marks the first large-lot order with Type 'F' couplers specified.

"We specified the Type 'F' coupler because we think its superior safety features will increase operating efficiency and reduce costly breaks-in-two of our freight trains.

"The Type 'F' coupler meets all the rigid requirements established by the AAR Committee on Couplers and Draft Gears. We found that in addition to increased strength, it reduced slack between cars and lessened the possibility of jackknifing. It also prevents the mating coupler from falling to track in case of pull-out, thus avoiding derailments."

D. V. Fraser
President

Today's luxury cars use Adlake equipment

Adlake products are used on the finest passenger cars, so naturally you would expect to find them on the Santa Fe's new cars for its famous El Capitan.

Adlake windows, curtains and hardware are on the 47 new cars built by The Budd Company for the Santa Fe.

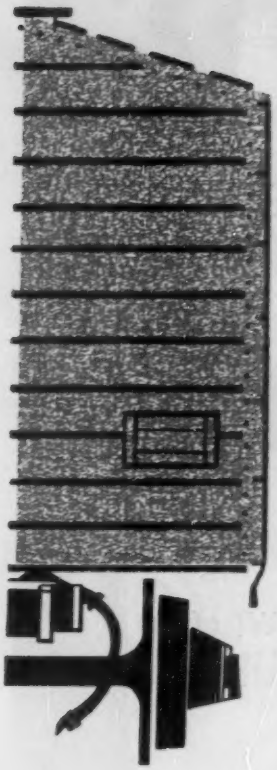
For full information on Adlake railway equipment, write The Adams & Westlake Company, 1150 N. Michigan, Elkhart, Ind.

Adlake
99th year
of serving the transportation, building and control industries

Manufacturers of Adlake Specialties and Equipment for the Railway Industry

The Adams & Westlake Company

Established 1857 • Elkhart, Indiana • New York • Chicago



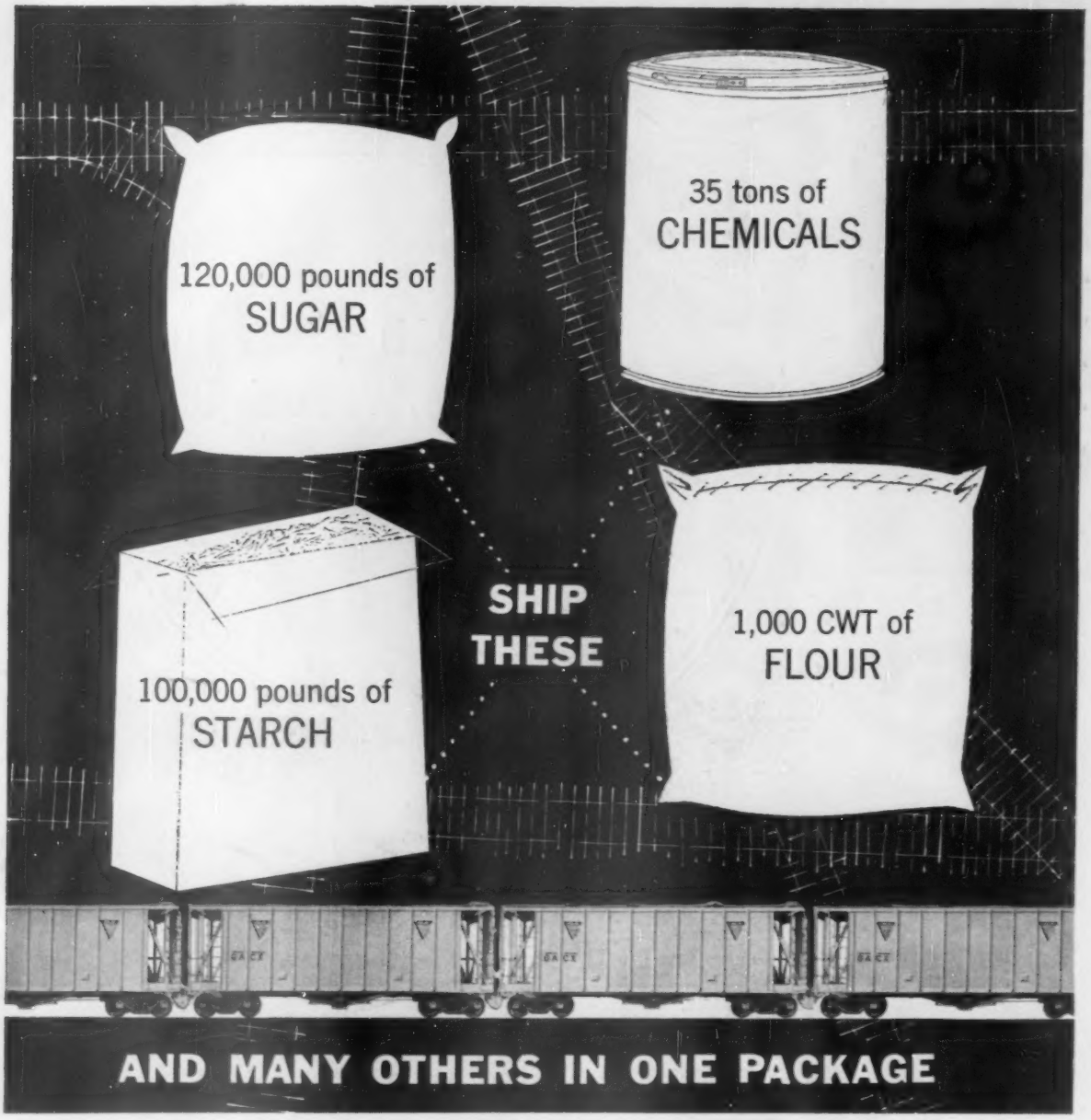
Guarding the roll in roller freight

National Oil Seals are vital to the smooth, trouble-free operation railroads expect from freight car roller bearing journals. Developed by National, these precision seals mount inside the journal box, keeping lubricant in, dirt, water and brine out. Uniform sealing is maintained under all conditions.

National Oil Seals are rolling hundreds of thousands of miles without replacement, and are playing an increasingly important part in the railroads' program of better equipment and service. When railroads completely standardize roller bearing journal sizes, still more roller freight will come into operation, and service to shippers will be even faster and more dependable.

National supplies oil seals for roller freight journal boxes, generators, compressors, vehicles and other equipment railroads use—and has provided over 1,000,000,000 additional oil seals for America's cars, trucks, tractors, aircraft, machinery and household appliances.

NATIONAL MOTOR BEARING CO., INC.
Plants: Van Wert, Ohio, Redwood City, Downey and Long Beach, California
General Offices: Redwood City, California

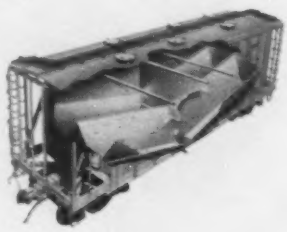


Save! Ship in Bulk via Airslide® Cars

The Airslide Car is designed and built for materials never before successfully shipped in conventional covered hopper cars. The Airslide Car has been proved by more than 3 years of continuous use in all climatic conditions all over the country.

Over 2000 Airslide Cars are now in use or on order. They require no re-spotting, provide far more clearance for unloading and can be unloaded into any conveying system as fast as the system permits. If such requirements are important to you, write today for full information about General American's new Airslide Car.

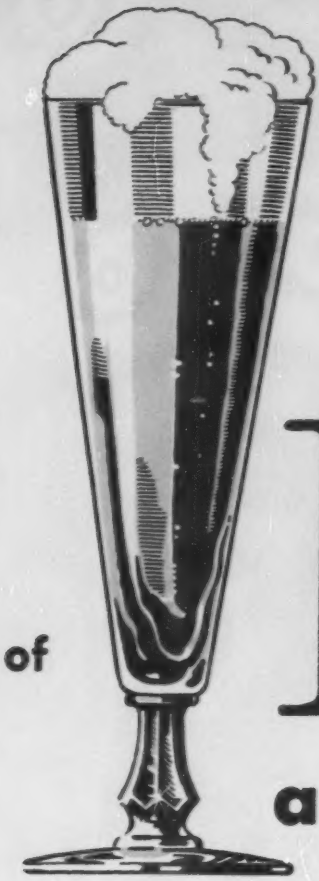
CLEAN INTERIOR DESIGN—*All-welded construction—no interior carlines or other protuberances. Provides maximum sanitation and minimum product retention. All loading hatches and discharge outlets provide a hermetic seal.*



AIRSLIDE GENERAL AMERICAN TRADE MARK

GENERAL AMERICAN TRANSPORTATION CORPORATION

135 South La Salle Street • Chicago 90, Illinois • Service Offices In Principal Cities • Service Plants Throughout The Country



In the shipment of Beer and LIQUORS...

brewers and distillers have found that Waugh Cushion Underframe cars provide extraordinary lading protection.

'PREMIUM' CARS ASSURE:

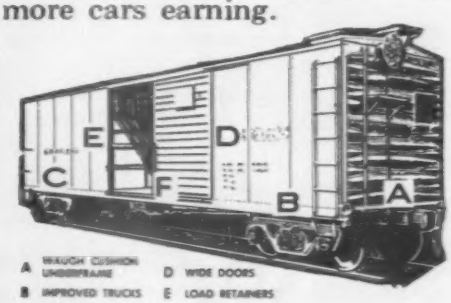
SAFE HIGH SPEED. No pull-out or run-in shocks means fast, safe freight movement without car damage or lading damage and fewer hot-boxes.

LADING PROTECTION. Minimum of longitudinal and vertical shocks to car structure and lading in fast classification and high speed operation.

SHIPPER GOOD WILL. Fast shipment of merchandise and safe arrival will bring premium traffic back to the rails.

DURABILITY. Protected against excessive shocks, cars require far less repair and remain serviceable years longer.

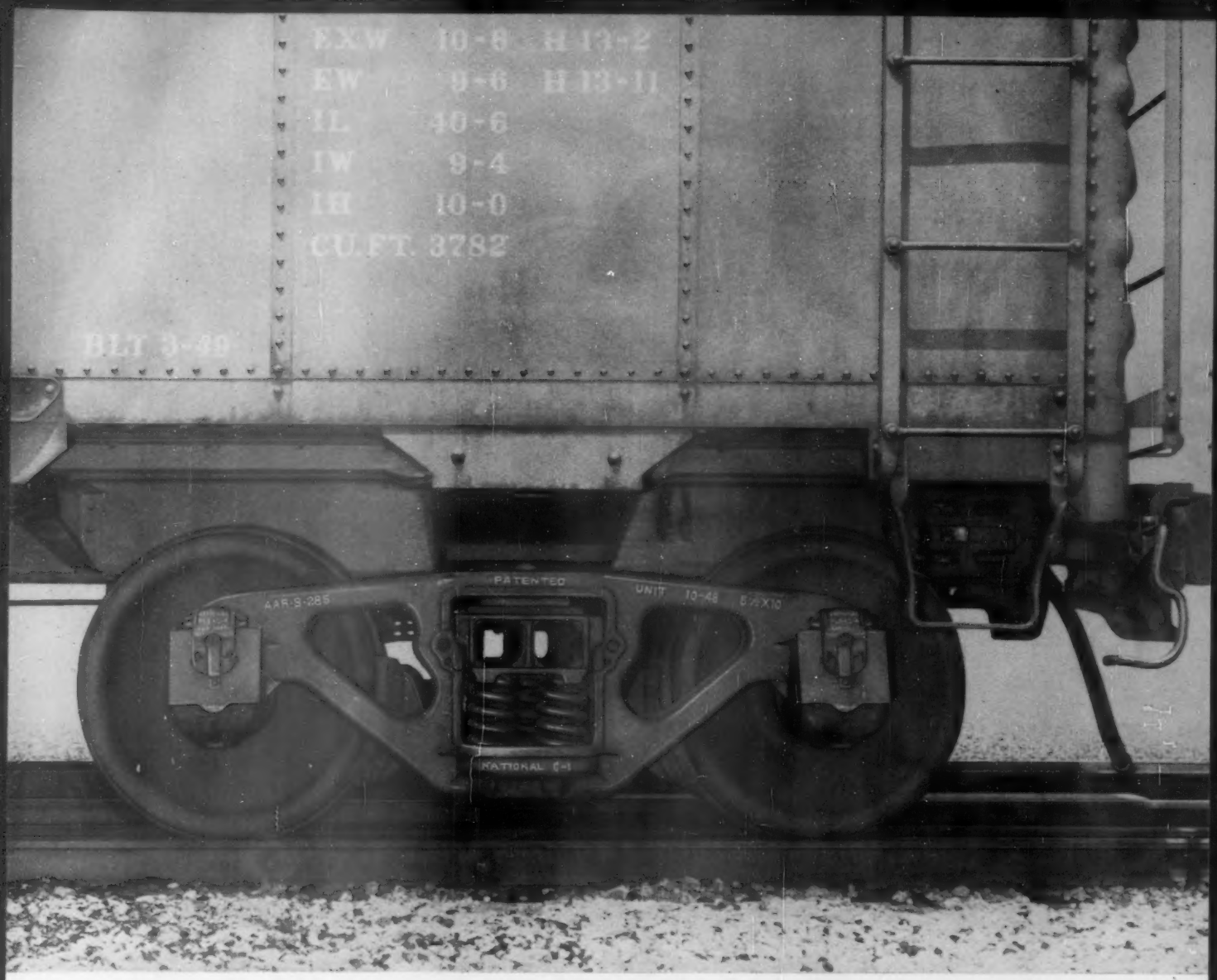
AVAILABILITY. Fewer cars on rip tracks mean more cars available when and where wanted . . . and more cars earning.



A WAUGH CUSHION UNDERFRAME
B IMPROVED TRUCKS
C IMPROVED BEARINGS
D WIDE DOORS
E LOAD RETAINERS
F SURFACED FLOOR

WAUGH Cushion Underframe

WAUGH EQUIPMENT COMPANY—420 LEXINGTON AVE., NEW YORK 17, N. Y.
NEW YORK · CHICAGO · ST. LOUIS · CANADIAN WAUGH EQUIPMENT COMPANY, MONTREAL



"Here are answers to your questions about C-1 Truck performance..."

"Have any inspections been performed on C-1 Trucks by impartial observers after the trucks had been in service over a long period?"

"Certainly. One inspection, for instance, was performed on a group of C-1 Trucks that had been in regular freight service over 6 years."

"Under what conditions was the inspection performed?"

"Side frames were removed and 15 separate examinations made. Component parts of the friction control mechanism were checked for proper functioning and wear-life . . . journals, journal bearings, wedges and lids were examined for general condition."

"Who witnessed the inspection?"

"The inspector and six other men: superintendent of motive power, shop superintendent, master mechanic, special engineer, car foreman and gang foreman."

"What did these railroad men say about the C-1 Truck?"

"The inspector commented: 'conditions found were remarkably good . . . all personnel were well pleased with the condition of the truck and all parts.' "

"How much maintenance was required?"

"From conversations with various personnel, it developed that maintenance has been almost nil. This, and other inspections, add up to convincing proof of the good service, proper functioning and longer wear-life of National C-1 Trucks."

"Sounds pretty convincing to me. Do you have specific data to back up your claims?"

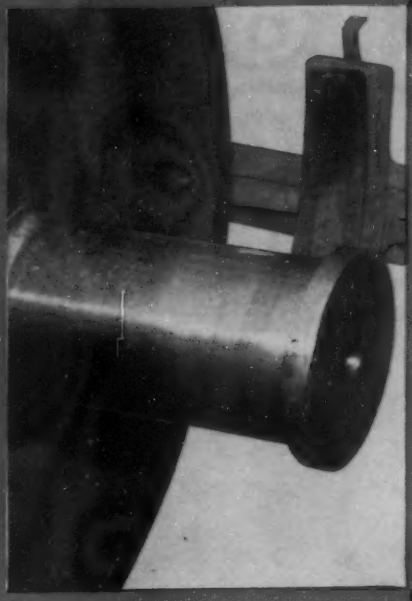
"We certainly have. Let me show you these unretouched photos of actual parts . . ."

AA-3894

"This photo shows the original axle. Note that there are no signs of abnormal wear and that its surface is smooth. Furthermore, wheel flanges were in good condition and the tread was not concave."

"This large, even bearing area in the side frame pocket shows that the 'rocking' motion of the wedge in the pocket reduces wear on both surfaces. These C-I *facts* all add up to a better-riding truck that cuts wear and tear on equipment and track . . . keeps maintenance costs 'way down."

"Here the friction wedge is retracted into the side frame column. Here, too, you can see the *full-bearing surface* of the wedge. And the condition of the side frame column wear pad shows minimum contact with bolster lugs."



"You can see the stability of the C-I friction control mechanism in this picture since the friction control wedge bears against this plate. Pay particular attention to the *uniformity of contact* shown."

"First, note the smooth journal bearings and minimum wear on journal bearing wedges where they contact the journal box roof. No line of contact between load spring coils shows that load springs did not go solid."

"The convex side of the friction wedge has a full-width bearing where it bears against side frame pockets. There's no evidence of scoring or gouging . . . just a smooth 'polishing' action. And the wedge spring is always in view so you *can* see that it is functioning."

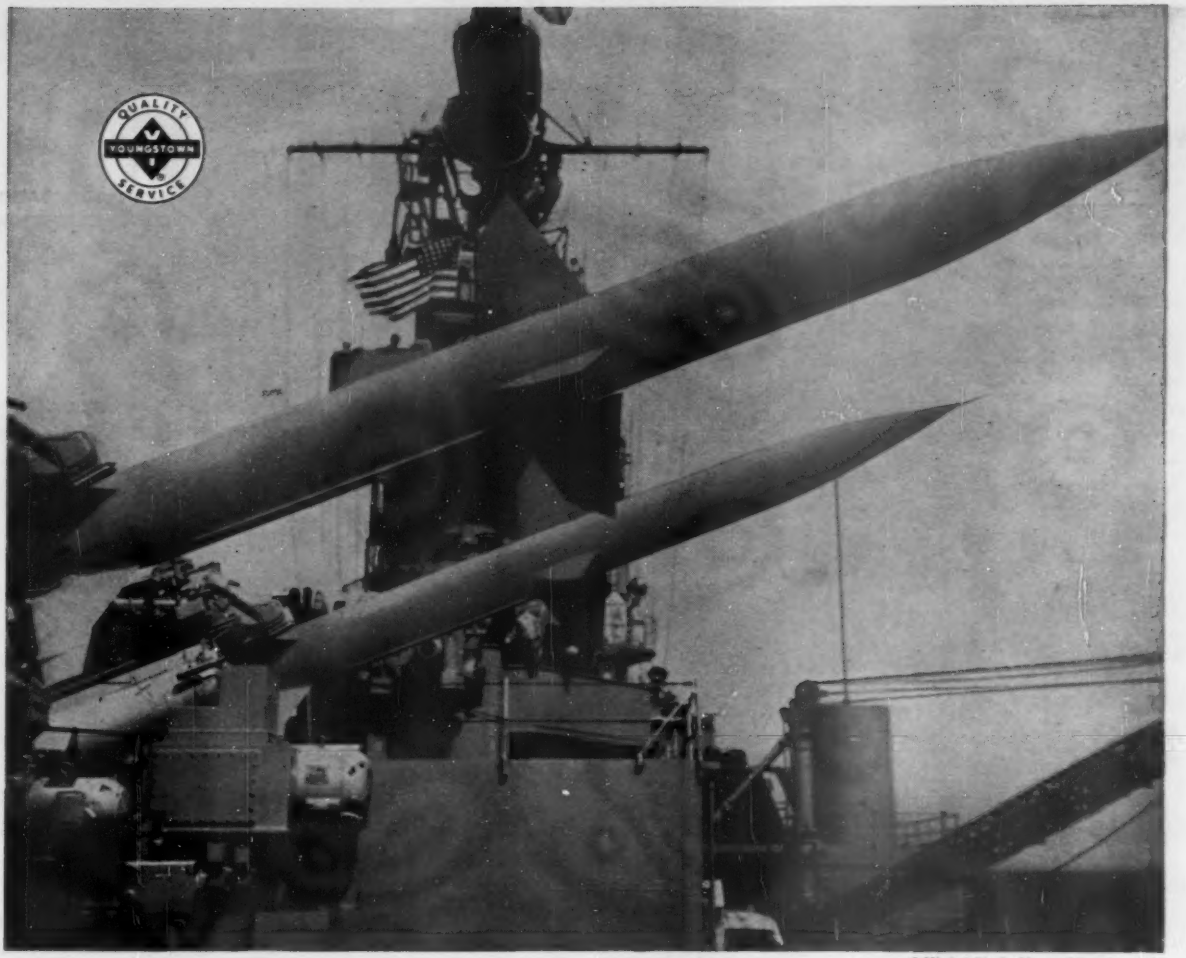
NATIONAL MALLEABLE and STEEL **CASTINGS COMPANY**

Cleveland 6, Ohio

COUPLERS • YOKES • DRAFT GEARS • FREIGHT TRUCKS • SNUBBER PACKAGES • JOURNAL BOXES and LIDS

let competition decide

by Hungerford



Official U. S. Navy Photograph

Supersonic tracker of enemy planes

Now guarding our coast, U. S. Navy's new guided missile has vital parts of Youngstown Alloy Sheets

Combining metallurgical skills of steelmaking with modern marvels of electronics, Terrier Guided Missiles are capable of destroying hostile targets at long range with great accuracy. The Youngstown Sheet and Tube Company is proud of participating in the production of high quality steel used in these new weapons for our naval forces.

The booster and sustaining mechanism of the Terrier are fabricated of Youngstown Aircraft Quality Alloy Steel Sheets by the Hicks Corporation.

Youngstown Alloy Steels are produced in a variety of forms and qualities to meet customers' specifications. Every ton is subject to a close quality control which insures uniform chemical composition and mechanical properties.

Whenever you have requirements for steel, consider Youngstown Carbon Alloy or Yoloy—sheets, bars, plates or pipe.

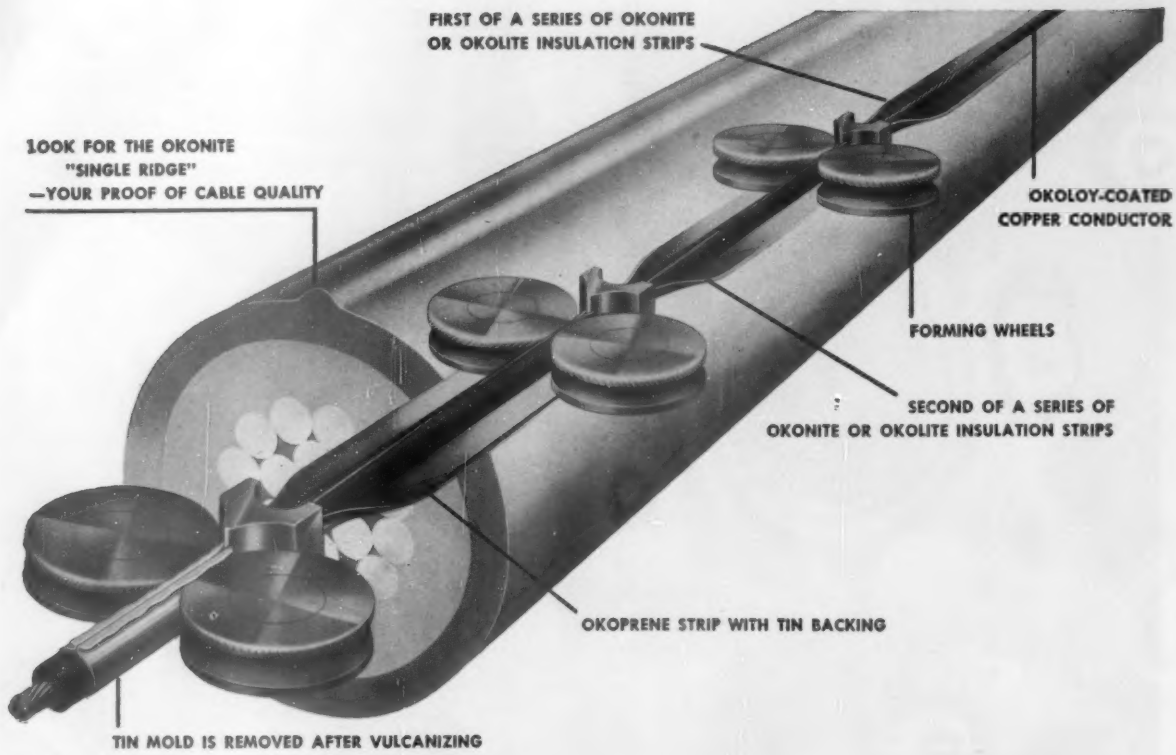
Youngstown

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steel

General Offices - Youngstown, Ohio
Export Office-500 Fifth Ave., New York
District Sales Offices in Principal Cities

SHEETS - STRIP - PLATES - STANDARD PIPE - LINE PIPE - OIL COUNTRY TUBULAR GOODS - CONDUIT AND EMT - MECHANICAL TUBING - COLD FINISHED BARS - HOT ROLLED BARS - WIRE - HOT ROLLED RODS - COKE TIN PLATE - ELECTROLYTIC TIN PLATE - BLACK PLATE - RAILROAD TRACK SPIKES - MINE ROOF BOLTS



Why the strip-insulating process assures longer cable life

As one of the oldest manufacturers of rubber-insulated cable, Okonite has made cable by all the known methods, namely the extrusion, dip and strip-insulating processes.

Long experience with these methods has convinced Okonite engineers that the strip process produces cables which are longer-lived and more reliable than those made by other methods. The following advantages explain why Okonite-Okoprene and Okolite-Okoprene cables are made by this method.

Perfectly centered conductors. The strip process is the only one that assures perfect centering of conductor. Insulation is uniform in thickness throughout cable length. There are no "thin spots."

Uniform vulcanization. Vulcanizing under pressure in a continuous metal mold makes the insulation tougher, more dense; physical and electrical characteristics are improved.

Single cure. Vulcanizing insulation and sheath in one operation is possible only with the strip process, thus avoiding shortened insulation life. Multiple vulcanization shortens the life of rubber compounds.

Strong bond. Single, simultaneous vulcanization in a metal mold under pressure insures permanent bond between insulation and sheath. This prevents "push backs" during installation, ionization at potentials above 2000 volts and water blisters in wet locations.

Quality control. Unlike any other method, the strip process permits electrical testing and visual inspection of each strip of insulating and sheathing compound both prior to and during application. These controls assure a void-free, uniform, solid dielectric wall.

Cables manufactured by this strip process have outstanding performance records. Next time you purchase cable for any circuit installation, insist on the *one* cable made by the strip-insulating process . . . specify Okonite-Okoprene or Okolite-Okoprene. For a full review of strip-insulating advantages, write for Bulletin RA-1069; The Okonite Company, Passaic, New Jersey.

OKONITE SINCE 1878 *insulated cables*

3138

$2,500 in Prizes For Ideas On Freight Cars

Two first prizes of $1,000 and two second prizes of $250 will be awarded for the best presentation of ideas on two important aspects of the freight car fleet of the railroads—(1) system of ownership and distribution, and (2) formulation of a modern car of high traffic appeal.

These prizes have been donated by Joseph T. Small, a nationally known analyst of railroad securities and an associate of the New York securities firm of Paine, Webber, Jackson & Curtis. As a serious student of railroads and one deeply concerned with their future, Mr. Small was prompted to put up the sum of $2,500 for the purpose, as he phrases it, "of getting as many people as possible—both in and out of the railroad business—to think hard about two vital questions concerning the all-important freight car fleet." Mr. Small asked Railway Age to assist in the selection of subjects and to administer the competition—an assignment which we gladly accepted.

A System of Ownership

SUBJECT I—A first prize of $1,000 and a second prize of $250 will be awarded for the best essays on the following subject:

"What system of ownership and/or distribution will encourage the maintenance of an optimum fleet of modern freight cars?"

This is a broad topic. Yet, because all of the elements in the picture must interlock, a relatively simple idea may win the prize. Included under this subject may be discussion of national or regional car owning companies; the role of private cars; car pooling plans; and relative rates and methods of compensating car owners—such as per diem.

Top weight will be given by the judges to presentation of the most practicable ideas that will accomplish the aim expressed in the contest title. Weight will also be given to the clarity and persuasiveness with which the ideas are put forth. Use of charts, diagrams or other graphic devices is invited. Written presentations should not exceed 4,000 words (exclusive of tabular matter and charts); shorter lengths are preferable.

For this subject the judges will be: Hon. Owen Clarke, member of the Interstate Commerce Commission; James P. Newell, vice-president, Pennsylvania; and Robert S. Macfarlane, president, Northern Pacific.

Design For the Future

SUBJECT II—A first prize of $1,000, and a second of $250, will be awarded for the best papers, graphic presentations, or both, on the following topic:

"What design of freight car, or combination of car and 'container', will best meet the following combination of characteristics: (1) Save time and money for shippers and receivers; (2) control, or eliminate, damage to lading; (3) make possible lower manufacturing costs; (4) cut cost of maintenance; (5) reduce time out of service for repairs; (6) carry a wide range of commodities; and (7) lend itself to rapid and cheap adaptation to changing needs of commerce?"

Written presentations should be not more than 3,000 words in length and drawings should be of a character that can be mailed, flat or folded, in a 13- by 10-in. envelope. Elaborate drawings are not required, because the prize will be awarded for the idea—not the execution. Drawings and sketches should emphasize the conception as a whole, rather than details of components and design, and should be clear to people without formal engineering education.

For this topic the judges will be: Arthur C. Schier, vice-president—traffic, General Foods Corporation; D. B. Jenks, president, Rock Island lines; and John W. Scallan, vice-president and general manager, Pullman-Standard Car Manufacturing Company.

The written essays, or presentations, on either topic, should be typed, double- or triple-spaced, on one side of the paper only. The first page of all submissions should contain *only* the (1) name, (2) address and (3) occupation of the author. This identifying information will be separated from the presentations before they are handed to the judges. No other part of the submission, therefore, should contain any information or mark of any kind which will betray the identity, location or occupational interests of the person submitting it. The judges want to be able to consider the proposals solely on the basis of intrinsic merit.

Submissions should be addressed to the Executive Editor, Railway Age, 30 Church St., New York 7, N. Y., and must be received by us no later than September 30, 1956.

All material submitted becomes the joint property of Mr. Small and of this paper, and we cannot assume responsibility for returning unsuccessful entries. Prize-winning essays, ideas or drawings will be published in Railway Age, and other submissions may be published at regular space rates by mutual agreement. Submissions not thus reserved for publication will be released to the initiators upon request, for such other use as they may care to make of them.

The editor is pledged not to reveal to the judges or to anyone else the identity of any of the entrants prior to the selection of the winning essay—and, therefore, not to reveal the names of unsuccessful contestants whose submissions are not published.

HIGH-LEVEL car's extreme height is 15 ft 6-1/2 in. above the rails. Center vestibule floor height is only 17-5/16 in.

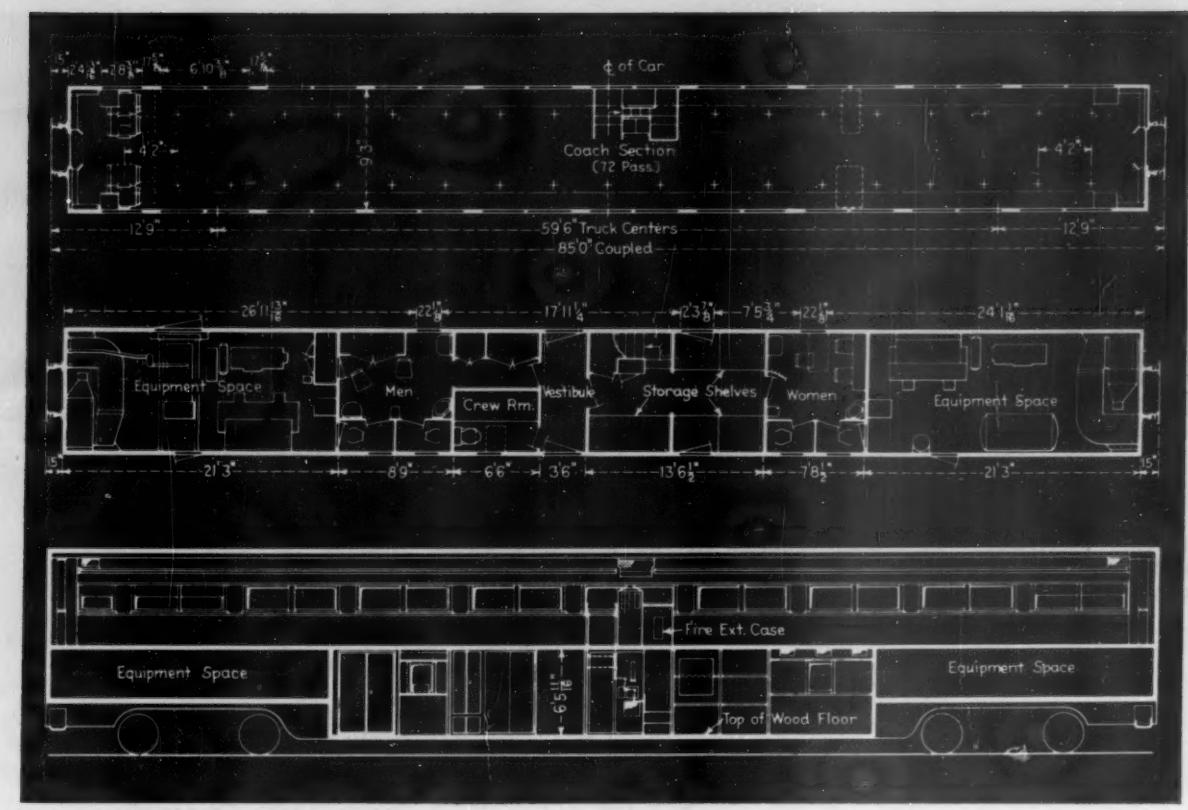
"El Capitan" Passengers Ride High

- *Santa Fe acquires 47 new high-level cars to reequip its 18-year-old Chicago-California all-coach streamliner—*
- *Result: high levels of comfort and luxury and greater seating capacity with reduced train length and weight*

INDIAN DESIGNS decorate all the cars. Pier panels and end bulkheads in this 72-passenger coach have such patterns.

LUGGAGE STORAGE shelves between vestibule and men's lounge is supplemented by parcel racks in upstairs coach section.

LADIES' LOUNGE is on lower level with vestibules, luggage storage spaces, men's washrooms, and crew accommodations.



FLOOR PLAN of high level coaches.

The Santa Fe is just putting into service the first complete trains of "high level" passenger cars. The five sets of equipment necessary to operate the daily all-coach "El Capitan" 39½-hour schedules between Chicago and Los Angeles are made up of these new Budd-built stainless steel cars, in which all passengers ride at dome car heights.

A floor 8 ft 3 in. above the rails extends the full length of the train. This arrangement requires special high level end doors and diaphragms and prevents assignments of most of these cars to trains of conventional equipment, but it does allow passengers to move from car to car with the same convenience as a standard train affords.

It means also that the new "El Capitans" can be two cars shorter and seat 146 more passengers than the former trains on this run, with almost no change in total train weight. Over two years ago Budd built the first two coaches of this type for the Santa Fe (Railway Age, September 13, 1954, p. 58). Their

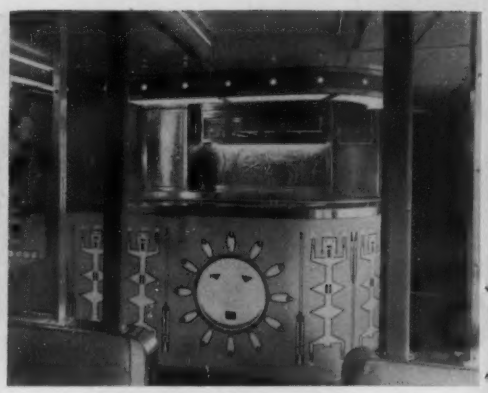
(Continued on page 45)

HIGH LEVEL COACHES — 35 Cars

AREA	MATERIAL	COLORS
LOUNGES AND TOILETS		
Floors: Field	Rubber tile	Mottled green
Border	Rubber tile	Mottled gray
Walls and ceiling	Painted aluminum and panels	Light sandalwood
Doors: Men's lounge	Painted panels	Zuni turquoise
Women's lounge	Painted panels	Rust
Upholstery: Men's L.	Naugahyde	Chestnut brown
Women's L.	Elastic redo	Green
Vanity tops	Micarta	Green confetti
PASSAGES AND VESTIBULE		
Floor: Vestibule	Stainless steel	Diamondette, unpainted
Lounge and stair	Rubber tile	Mottled green and grey
Walls and ceiling	Stainless steel	Unpainted
Walls and ceiling (Men's L. Pass.)	Painted aluminum and panels	Sandalwood
Doors	Painted panels	Rust
Side doors	Stainless steel	Unpainted
COACH SECTION		
Floor	Carpet	Henna, cactus leaf
Wainscot	Laminated plastic	Zuni turquoise
Pier panels	Formica	Screen print on frost walnut
Frieze, ceiling, and parcel racks	Painted aluminum	Light sandalwood
Parcel rack nosing	Elastic redo	Green
End walls (over wainscot)	Painted aluminum, stainless grills	Rust
Wing partitions	Laminated plastic	Zuni turquoise
Upholstery	Mohair and plastic coated fabric	Turquoise

SKY LOUNGE'S bar and newsstand are at far end of car together with washrooms.

LOWER LOUNGE seats 26. Glass panels are etched with Southwestern images.



BAR in lower lounge area is placed against bulkhead separating this section from equipment space.

HIGHLY FAVORABLE passenger reaction to two test cars, along with increased economy—seven chair cars have greater seating capacity than eight conventional ones — were factors in. . . .

WHY THE SANTA FE WENT "HI-LEVEL"

"The theory behind the high level train is really the success we have had with high level dome-lounge cars."

This remark, from General Passenger Traffic Manager R. T. Anderson of the Santa Fe, does much to explain that road's decision to re-equip its streamlined chair car train, the "El Capitan," with "Hi-Level" equipment. The Santa Fe will place the new train in service the middle of this month, following an extended exhibition tour.

As explained in the accompanying article, the Santa Fe's train is a significant departure from the ultra-lightweight, low-slung trains which have attracted so much attention in recent months. But where the lightweights aim at the short distance travel market, the Santa Fe's "Hi-Levels" are designed for transcontinental travel—between Chicago and Los Angeles.

CUSTOMER APPEAL—The Santa Fe first stepped into the "Hi-Level" picture two years ago with the purchase of two test cars of this design. These cars were operated for several months to and from the West Coast. Passenger representatives rode the cars, checking their performance and compiling data on customer reaction.

Today, the Santa Fe has a bulging file as evidence that passengers found the original cars to their liking. As one man from Fort Madison, Iowa, put it, "This is the most comfortable chair car I've ever ridden." Another rider wrote the railroad that his trip in a "Hi-Level" car was the "smoothest and most comfortable ride I have ever had."

Surveys conducted among the passengers during each trip confirmed such reactions. On a typical run in September 1954, 73 of the 79 passengers said they liked the smooth-riding upper-level coaches. They cited such plus factors as less track noise, the high level view, smoother riding quality, the large rest rooms and the downstairs storage of baggage. A few asked for small racks at the seats for hats and small bags—a request which the Santa Fe is meeting.

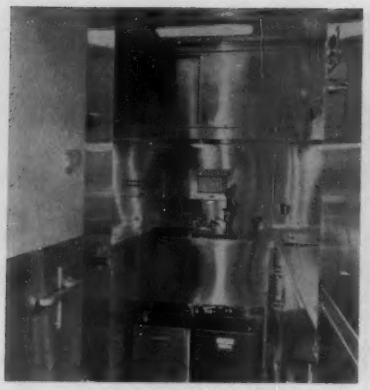
One problem that did crop up during the test period was the handling of elderly or infirm persons who did not wish to go up and down stairs to the lower-level washrooms. This the railroad has solved by installing two washrooms in one end of the train's dome-lounge car. A special block of seats in the near end of the adjacent chair car will be reserved for these handicapped patrons.

REDUCED COSTS—Along with the obvious customer appeal of the "Hi-Level" cars is the fact that they promise to step ahead of conventional equipment in economy of operation and maintenance. For one thing, fewer cars will handle more people.

The double-level arrangement of the new cars eliminates vestibules and provides 28 more seats per car than present "El Capitan" equipment, Mr. Anderson points out. This means that seven chair cars will seat 496 passengers, compared with previous capacity of 350 in eight cars.

Other savings will be forthcoming in the diner. The upper-level dining car of the new train, with tables upstairs and the kitchen below, will have a seating capacity of 80. More patrons could be accommodated with snack-type meals in the lounge adjoining the diner. In this way, one "Hi-Level" diner will do the work of two conventional cars.

WEIGHT REDUCTION — The big "Hi-Level" car body is quite heavy, particularly as compared to the most recent low-slung lightweight prototype designs. On the other hand, a 10-car train (disregarding head-end cars) will have as much capacity as a 16-car train of standard equipment. On a weight per passenger basis, the "Hi-Level" design's 2,300 lb is about 250 lb less than that of the equipment being replaced.



BAR SERVICE ROOM in upper level of sky lounge is separated from the main lounge area by partition and mirror.

(Continued from page 43)

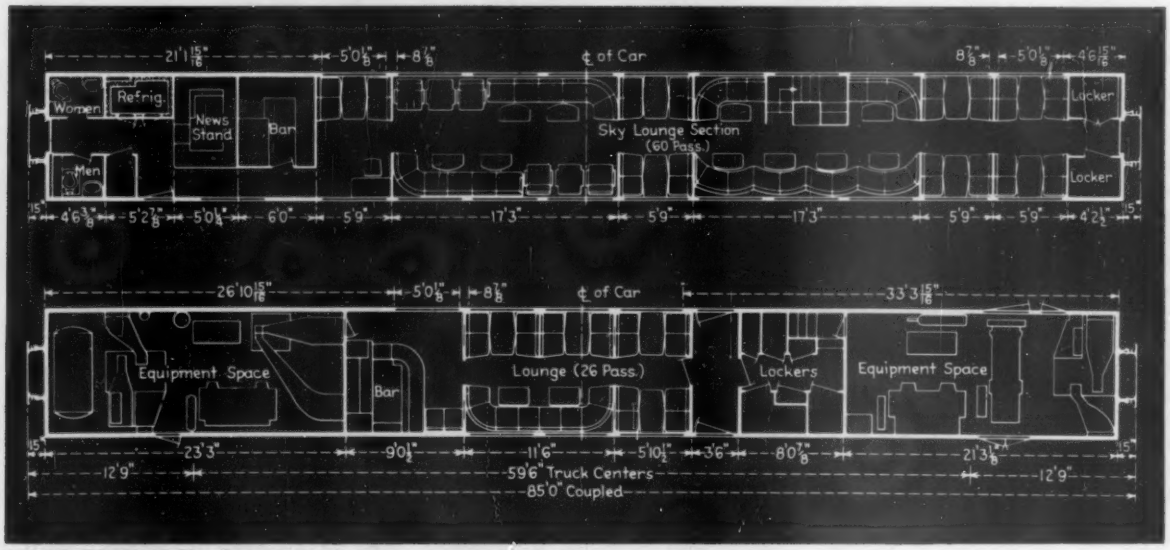
quiet and comfortable ride has been demonstrated in service, and confirmed by passenger surveys. Roadbed noises are farther away from the passenger-carrying sections of these cars. Shorter trains are possible because more "car" is packed into the AAR standard 85-ft length.

The new trains include the first high-level dining and high level lounge cars to be put in service.

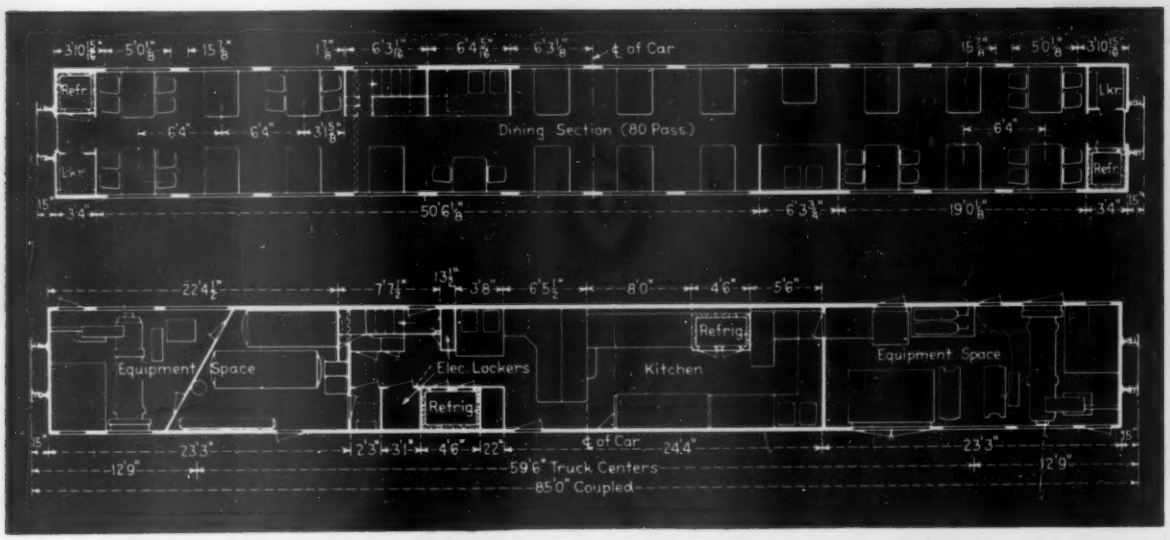
The structural design of these 47 Budd-built cars provides a depressed floor in the section between the trucks. This low-level area in the coaches is utilized for luggage storage, lounges, toilets, crew's sleeping room, and the entrance vestibule. This same space is the kitchen and

SKY LOUNGES — 6 Cars

AREA	MATERIALS	COLORS
END PASSAGES AND TOILETS		
Floor	Rubber tile	Mottled brown and white
Wainscot, end doors, newsstand, A-end walls	Stainless steel	Unpainted
B-end, toilet walls and ceilings	Painted panels	Rose beige
A-end ceiling	Painted panels	Orchid gray
Toilet doors	Painted panels	Mesa red
Newsstand counter	Formica	Black oak
SKY LOUNGE		
Floor	Carpet	Light charcoal, cactus leaf
Stairs	Carpet	Dark charcoal, cactus leaf
Wainscot, stairwell walls, low partitions	Laminated plastic	Zuni turquoise
Pier panels and end walls	Painted aluminum	Rose beige
A-end walls	Painted aluminum, Stainless grills	Zuni turquoise
Ceiling	Painted Aluminum	Orchid gray
Upholstery: chairs and 6-pr banquette seats	Naugahyde	Coral, turquoise piping
1pr banquette seats and settees	Redo	Beige, turquoise piping
Table and desk tops	Formica	Shell oak
LOWER VESTIBULE		
Floor	Stainless steel	Diamondette, unpainted
Walls, ceilings, doors	Stainless steel	Unpainted
LOWER LOUNGE		
Floor	Rubber tile	Light charcoal, cactus leaf
Wainscot	Painted Aluminum	Mesa red
Pier panels	Formica	Screen print on picwood
Ceiling, header	Painted panels	Pueblo beige
Wall at bar	Painted panel	Turquoise
Window sills, table tops, misc. surfaces	Formica	Shell oak
Bar top	Formica	Black
Bar and equipment	Stainless steel	Unpainted
Bar front	Carved linoleum	
Upholstery: Seat at bar	Naugahyde	Coral, tan piping
Card playing sections and settees	Naugahyde	Straw, coral piping



FLOOR PLAN of Sky Lounge section.



FLOOR PLAN of High Level Diners.

HIGH LEVEL DINERS — 6 Cars

AREA	MATERIAL	COLORS
END PASSAGES		
Floor	Rubber tile	Mottled brown and white
Walls and doors	Stainless steel	Unpainted
Ceiling	Painted aluminum	Light biege
DINING SECTION		
Floor	Carpet	Gray, cactus leaf
Wainscot, stairwell and partitions	Laminated plastic	Zuni turquoise
End walls	Laminated plastic with plastic designs	Zuni turquoise
Pier panels	Formica	Design on frost walnut
Frieze and ceiling	Painted aluminum	Light beige
Service areas	Stainless steel	Unpainted
Table tops	Formica	Charcoal skylark
Upholstery	Superneedlepoint and Naugahyde	Red coral
Window sills	Formica	Black oak
Roller curtains	Fabric	Frost walnut
Metal trim	Satin finish	Unpainted

pantry of the high level diners, and in the lounge cars is a secluded cocktail section. In every case, the design has produced an upper level which permits a great deal of imaginative arrangement, and a maximum of passenger comfort.

The upper levels of 25 of the coaches have space for 72 leg-rest reclining seats spaced on 50-in. centers. The other 10 coaches seat only 68 because they have a stairway to standard platform level from the aisle at one end. This was done so that conventional cars can be included in "El Capitan's" consist. The trains will regularly be made up with the diner and sky lounge in the center. The coaches with the aisle stairways will be used at the extreme ends of the assembled high level equipment. Regularly included will be three conventional head-end cars. Each high level car has a center stairway connecting its upper and lower floor levels.

Spaces between the high level floor and the trucks provide weatherproof areas for the air conditioning, electrical and air brake equipment, and water storage tanks. Each car has its own diesel-driven generating equipment. Coaches have a single 40-kw Caterpillar D-315 diesel alternator set. Load of the Angelo Colonna electric kitchen on the diners requires two 60-kw Caterpillar D318 units to supply sufficient 220-v, 3-phase a-c power.

Equipment spaces of all cars can be reached from the interior. This makes it possible to do repair work en route without delaying the train. All cars have 220-v, 3-phase train line and Pyle National receptacles and train line jumpers. Diner underfloor fuel tanks supplement the main fuel tanks which are an integral part of the end underframe assemblies of all cars.

End underframe units are of fabricated, arc-welded, low alloy, high-tensile steel. The remainder of the car structure and sheathing is stainless steel. Interior lining of the equipment spaces and some lower level partitions are carbon steel. Linings of the cars' side and end walls, and ceilings of the upper levels, are 0.081-in. aluminum backed with felt sound-deadening material. Wainscot and stairwell walls are Westinghouse laminated Micarta. Pier panels are Formica in most of the cars. Lower level ceilings, partitions and interior doors are plywood, faced on both sides with zinc coated steel. Entrance areas and some other sections are lined with stainless steel.

Air distribution to the upper levels of all cars is through special

DINER, seating 80 persons, carries out the train's Southwestern motif.

"SUBVEYOR" brings food from the kitchen in lower level to the dining room in upper level.

Pyle-National multivent ceiling panels which also incorporate side-slot air delivery. Lower levels are ventilated through bulkhead delivery systems with Triflex grills. Cooling for the 4,800 cfm of air delivered to the upper levels is by two 8-ton evaporator-blower units—one in each equipment section. This air returns through decorative Barber Colman grills in the end walls and through vertical ducts to plenums in the equipment sections. Here it is combined with fresh air drawn through Farr dynamic grills in the car sides. The mixture is filtered through Farr filters (2-in. on diners and 4-in. on other cars) before going to the Trane evaporator-blower units.

Diners and lounge cars have an additional 4-ton evaporator-blower mounted in one equipment section. This unit cools the kitchen of the diner and the lower lounge of the sky lounge cars with 1,200 cfm air delivery.

Refrigeration for these systems is provided in all cars by two electrically driven 10-ton Trane compressors. These unloading compressors automatically adjust through eight steps of capacity control. Coaches and lounge cars have two separate dry-type condensers, and the diners have a single split-type condenser. Both styles utilize water spray cooling only in event of head pressures over 225 psi. Equipment sections of the diners contain three additional small compressors for the food refrigeration equipment. Two such units accommodate the lounge-car requirements.

A modified Vapor unizone steam heating system is used in all cars. This includes fin-type radiation at the floors of both levels, and steam coils in each of the evaporator-blower units. There is provision for heating the equipment spaces to protect the water tanks and the diesel engines. These automatically controlled systems are supplemented by isolated manually controlled areas.

The reclining seats for the coaches were manufactured by Dwight Austin, and the majority of the loose chairs in the lounge and dining cars came from Coach & Car Equipment Co. Mohawk carpeting is used throughout the new trains, along with Goodyear rubber tile in certain areas. The double-width, double-glazed breather type windows supplied by Adams & Westlake are divided by a center mullion and are glazed with Pittsburgh polished Solex and safety plate glass.

The Pantasote roller curtains operate in Adlake aluminum curtain guides—a part of the window assembly. The lounge cars have no upper level window curtains. They do have Adlake curved double-glazed sash units set in the roof producing an effect like that obtained in dome cars. Because of the uniform height of all the cars in this train, there are no "windshields" in these sky lounges.

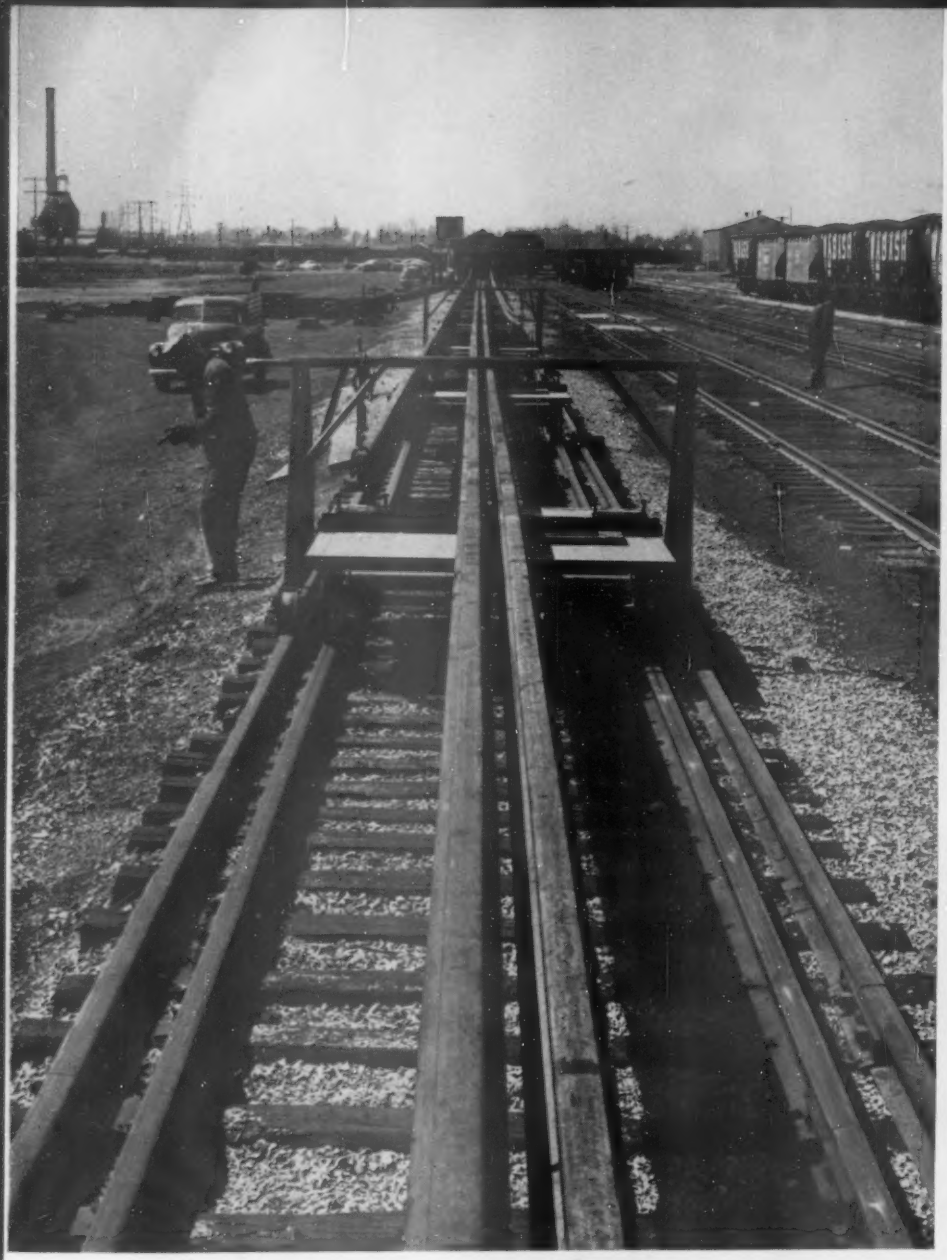
STAINLESS STEEL glitters in the kitchen area of the "El Capitan" diner.

Parcel racks in the coaches which include the reading lights, were supplied by Luminator as complete assemblies. Other coach illumination also was supplied by Luminator, while the diners and lounges have a combination of Luminator and Electric Service Manufacturing lighting units. In general, illumination is of the continuous fluorescent, indirect type.

Toilets are equipped with a combination of Crane, Colonna and Duner fixtures. Along with the kitchen equipment in the diners, the bar and newsstand in the sky lounge cars were built by Angelo Colonna. The diners have a dual electrically operated elevator system (known as "subveyors") to connect the upper-

(Continued on page 50)

Long Rails



SPECIAL GANTRIES, operating on wide-gage track (above), help load long rails on push cars. Each gantry is carrying the forward end of a long rail coming from each production line (background). Two long rails have already been loaded on push cars.

Heavy-duty push cars had a "heavy" role recently in laying 663-ft butt-welded rails on the Wabash. Thirty-six such cars, each of 10,000 lb, were used to haul the long rails from the point of welding to the site of installation in the track. Their use avoided need for a work train, and proved entirely satisfactory, according to officers of the road.

Double Welding Line Used

Use of the push cars was an integral phase of an enlarged butt-welding program undertaken by the Wabash this year, based, at least in part, on reduced costs resulting from a welding set-up consisting of two parallel production lines. Savings were expected because the parallel lines could be operated with fewer workers than two lines operated independently. Officers of the road state that welds cost considerably less than bolted joints, and they add that contemplated improvements in the production line are expected to result in further savings of $1.25 per weld.

Much of the new rail to be laid by the Wabash in 1956 will be butt-welded before installation. A total of 15 track-miles of new 132-lb rail will be joined into 78-ft lengths and

PUSH-CAR TRAIN en route to rail-laying site, carrying six 663-ft rails. Hauling units are Fairmont ballast-drainage cars.

Travel on Push Cars

Wabash uses special equipment in loading and transporting 663-ft lengths butt-welded at double production-line set-up

7.6 track-miles of new 115-lb rail will be butt-welded into 663-ft lengths. The 1956 new rail program will include approximately seven additional miles of rail laid standard lengths. If this rail could have been received early enough it also would have been butt-welded into 663-ft lengths.

Of the new 115-lb butt-welded rail, 4.8 track-miles were scheduled for laying in the main line just east of Moberly, Mo., and 2.8 track-miles at Clifton, Mo., about six miles west of Moberly. For convenience, therefore, the butt-welding set-up was established at Moberly. The Linde Air Products Company's pressure-welding method is used to produce the "Ribbonrail." In general the equipment and procedures used in the butt-welding work follow conventional practice. However, the problem of loading the long rails onto the push cars as they come from the production line was solved in an ingenious manner.

How Push Cars Are Loaded

There are 36 Fairmont push cars, used in two sets of 18 each. When one set is transporting the long rails the other is being loaded at the butt-welding set-up.

Each push car has a roller on each side to permit loading two strings of rails as they come from the production lines. Fastened transversely to the bed of each push car between the rollers is a heavy steel angle section onto which the long rails are barred after they have been pulled into their final position. Each string of push cars accommodates six lengths of the long rails.

When in position for loading at the end of the production line, the push cars are spaced 35 ft apart, coupled together by lengths of ½-in. steel cable to maintain the proper spacing while the rails are being pushed onto them.

Two special gantries which operate on 75-in. gage rails straddle the push cars on the loading track. Each gantry operates on four flanged wheels and has an A-frame at each end to support a cross member at the top. As the end of one of the long rails comes from the production line, it is fastened in a somewhat raised position to the crossbeam of one of the gantries so it will not sag when moving between push cars. As the rail is extended progressively out over the push cars it carries the gantry with it.

When a rail has reached the end of its movement, the gantry is detached and rolled back to the end of the production line to pick up the next rail.

Hauling and Unloading

For transporting the push-car trains from Moberly to the point of installation two Fairmont ballast drainage cars are used, one at each end of the train. At the installation site the long rails are first unloaded onto the ties between the existing track rails and are spiked at every fourth tie to keep them in position. The inside spikes are driven before the rails are unloaded. The rails are unloaded two at a time by pulling the push cars out from under them.

In this operation the ends of the rails are chained to the track in the proper staggered position relative to each other. In preparation for shifting the rails to their final position, one length of each pair is cut as necessary for an insulated joint to be applied. The insulated joint is applied in the other length after it has been placed in track.

Placing the long rails in final position pretty much follows conventional practice: The joints in the old rails are unbolted and the rails are barred out by hand.

LONG RAILS are being barred back onto rollers in preparation for unloading. Note that one length has already been anchored to track with chain.

PUSH CARS move out from under rails, causing them to settle on ties. They will then be barred to center of track and spiked.

"EL CAPITAN" . . .

(Continued from page 47)
level dining room with the lower-level kitchen. Water systems in all cars are equipped with Tested Appliance automatic chlorinators and Everpure filters.

All these cars are built along standard Budd lines with stainless flat, fluted and corrugated outer sheathing over stainless framing members. The LAHT end underframe units extend back to the depressed floor section. Their design permits a welded attachment to a 20-in. square vertical structural column which distributes longitudinal loads to the upper floor structure and to the shallow depressed section center sill. Portions of the load are transferred to the side sills through the body bolsters and through the structural partitions at the inner sides of each of the two vertical structural columns.

The entire car structure is designed as a modified girder with the roof and floor as the chord members and the sides as the shear carrying members. Standard floor levels have 4-in. deep transverse floor members and the depressed section has similar 3-in. sections. Ultralite thermal insulation in 3-in. thicknesses is used throughout most of the body of the
(Continued on page 52)

REGULAR CONSIST OF THE NEW "EL CAPITAN"

Locomotive
Storage Mail Car
Baggage Car
Dormitory Baggage Car
68-Passenger High Level Coach
72-Passenger High Level Coach
72-Passenger High Level Coach
80-Seat High Level Diner
86-Seat Sky Lounge
72-Passenger High Level Coach
72-Passenger High Level Coach
72-Passenger High Level Coach
68-Passenger High Level Coach
Capacity: 496 Passengers

Railroading

After Hours

by James G. Lyne

Editor, Railway Age

Policy for Competition

J. E. Gilliland, traffic vice-president of the Frisco, explained to me the other day his company's policy for meeting truck competition. In substance, here is what he said:

"There is a lot of short-haul traffic for which the truck is economically best suited—and there is no point in the railroads competing for such business. When it comes to the longer hauls, however, we can offer alternative services that the trucks cannot match.

"For example, on these longer haul services, we can offer the shipper our piggyback service—which matches the service of the long-haul truck completely: the same service, the same minimum loads, the same rates. This piggyback service is profitable—but we also know that we can haul the same traffic in regular railroad service, using standard railroad equipment, with higher minima and not quite so much speed, at lower cost than we can handle this traffic by piggyback.

"Our rates for regular railroad service are—or should be—lower than our piggyback rates, both because of the lower cost to us and the fact that the service, on the average, is not quite up to the standard (in speed, convenience, minima) of the piggyback service.

"Thus we are able to meet the shipper's demands whether his emphasis is on speed and convenience, or on economy. Our competitor, the truck, offers only the convenience and speed—the economy is beyond him, on the longer hauls.

"When the railroads are everywhere reflecting the great economy of all-rail service in their all-rail rates; and are, at the same time, matching the truck completely with their piggyback service, I believe our problem of truck competition will be largely resolved.

"This doesn't mean, of course, that trucks will be put out of business—far from it. They will still dominate the short-haul field, as they should. There is still a lot of 'cross-country' hauling, where rail routes are longer than the highway, and where the trucks will still be predominant. And they'll still compete with us on the long-haul traffic parallel to our rail lines for the traffic that demands superior service at premium rates—whenever our piggyback service isn't kept up to standard.

Healthy Competition

"But competition that is keen and on a sound business basis will be good for us, and good for our customers—and such competition need not frighten us; and it shouldn't scare the truckers either. We'll both prosper more than we are prospering now—if we concentrate on our 'inherent advantages,' with each of us making the most of the service qualities in which we excel.

"For railroads to reflect the economy of all-rail service in their competitive rates, they must of course know a lot about their costs—rail costs as well as the costs of highway transportation. We started intensively with such studies on the Frisco about a year ago, and the information which is being developed is just as helpful as we expected it was going to be."

"EL CAPITAN" . . .

(Continued from page 50)

car. The entire inside of the car shell was sprayed with Insulmat for acoustic insulation. The cars have Miner A4XB draft gear, Miner and Standard buffing equipment, and ASF Type E controlled slack couplers.

The General Steel trucks, both four- and six-wheel type, are of the single drop equalizer, outside swing hanger, all coil spring type with Houdaille vertical shock absorbers. They have Timken roller bearings, Canton Forge equalizers and swing hangers, ASF springs, Transportation Specialties side bearings, Gatke center plate liners, and Burkhart and Johns-Manville sound deadening pads. Budd disc brakes and Westinghouse Decelostat wheel slide control are used.

The cars have Westinghouse Air Brake's modified HSC brake equipment with the D22-AR control valve without straight air or electric train control. One truck on each car has a National Brake handbrake.

The Caterpillar D-315 40-kw, and D-318 60-kw, self-regulated diesel alternators used for the generating equipment are arranged so that they can be rolled out of the cars on track extensions. They have flexible fuel, water, steam and electrical lines so disconnecting can be done rapidly. An isochronous governor maintains engine speed within one per cent of the rated 1,800 rpm, on the 40-kw units. For parallel operation of the 60-kw engines, a governor setting of 3% is used. The engines are protected by automatic low oil and hot engine shutdowns, and the equipment areas are protected by automatically and manually operated carbon dioxide fire extinguishing systems. The electrical trainline system is arranged to cut loads approximately in half in event of the failure of the one engine on the coaches and lounges, and in the event of the failure of one of the two engines on the diners.

The 220-v, 60 cycle three phase a-c generated by the diesel alternators is used directly for the air conditioning and refrigeration equipment, and for the kitchen ranges and broilers. Single phase 220-v a-c is used to operate the exhaust fans in the electric lockers and wash rooms. General Electric transformers are used to deliver 110-v, single phase power for fluorescent and incandescent lighting, and for the dish washer and smaller kitchen appliances.

A 25-amp selenium rectifier produces 32-v d-c for charging Exide storage batteries in two battery boxes under the A-end of the car. The battery supplies emergency lighting, diesel starting, and control requirements.

The Okonite wiring is carried in Youngstown and Walker conduits. Both Pyle National and Crouse Hinds condulets were used. There are two 220-v, 3-phase Pyle National receptacles on each side of the car for terminal standby service. Control circuits are arranged to require both to be plugged in to supply this service.

Motorized circuit breakers furnished by Westinghouse Electric provide a simple control arrangement, interlocked to prevent more than one source of power being used at one time. Synchroscopes are used for paralleling the diner alternators.

SPECIFICATIONS OF THE NEW HIGH LEVEL CARS FOR "EL CAPITAN"

	Number of Cars	Weight (Lb)	Trucks and Journals	Air Cond. Capacity (Tons)	Diesel Alternators	Maximum Electrical Loads (kw) Lighting and Misc.	Air Cond. System	Kitchen Refrig.	Total	Fuel Capacity	Water Capacity (Gal)
72-Passenger Coach	25	162,210	4-wheel, 6½ x 12	16	One 40-kw	5.9	32.0	....	37.9	200	300
68-Passenger Coach	10	163,160	4-wheel, 6½ x 12	16	One 40-kw	5.9	32.0	....	37.9	200	300
Sky Lounge	6	176,100	4-wheel, 6½ x 12	20	One 60-kw	6.3	39.3	1.5	47.1	275	300
Diner	6	208,600	6-wheel, 6 x 11	20	Two 60-kw	5.7	31.0	48.3	85.0	550	800

(Continued from page 16)

MISSOURI PACIFIC. — C. L. Brown, trainsmaster, St. Louis Terminal division at St. Louis, appointed assistant superintendent, St. Louis Terminal division (east side of river) at Dupo, Ill. **G. T. Graham,** assistant trainmaster at Newport, Ark., succeeds Mr. Brown.

E. W. Hargrave, assistant general superintendent transportation, Houston, Tex., transferred to St. Louis, Mo., and his former position abolished. Position of superintendent transportation at Palestine, Tex., abolished. **J. C. McVey** appointed division trainmaster, Wichita Division, Wichita, Kan., succeeding **R. H. Gragg,** retired.

C. W. Brown, trainmaster, Little Rock Terminal, North Little Rock, Ark., appointed trainmaster, Chester, Cairo, and Cape Girardeau divisions and Sparta subdivision at Chester, Ill., succeeding **D. H. Martin,** transferred to the East and West, Benton and Mt. Vernon subdivisions at Chester. Mr. Brown's successor is **J. W. Dunlap,** assistant trainmaster, Omaha division, Atchison, Kan.

Carl A. Becker, general agent, Tulsa, Okla., transferred to Milwaukee, Wis., succeeding **Vincent C. Knorst,** deceased. Mr. Becker's successor is **Leland B. Bartlett,** general agent, Alexandria, La., who in turn has been replaced by **Robert J. Ball,** transferred from Atlanta, Ga. **Oliver W. Storck** replaces Mr. Ball.

MONON.—Donald E. Cripe appointed freight traffic agent at Chicago.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—W. K. Wilson, assistant general freight agent—rates, appointed assistant general freight agent—commerce, succeeding **Luther Redmon,** commerce agent, resigned. Commerce agent position abolished. **S. L. Wilhoite** named assistant to general freight agent—rates.

NEW YORK, ONTARIO & WESTERN. — Thomas L. Francis appointed general agent at Buffalo, N. Y.

NICKEL PLATE.—G. R. Bowman, general superintendent at Bellevue, Ohio, named general manager at Cleveland. **H. P. Thinnes,** assistant general superintendent, Bellevue, promoted to general superintendent there. **R. A. Gleason,** superintendent, Buffalo—Cleveland divisions, Conneaut, Ohio, named assistant general superintendent at Bellevue. **E. D. Walsh** appointed assistant superintendent, Muncie, Ind.; **M. J. Bickel** named

(Continued on page 56)

YOU CAN BE SURE
if it's a non-spin
Equipco®
HAND BRAKE

Are you sure your car will "stay put"?

. . . when it is "anchored" on an inclined track . . . with nothing to hold it but the hand brake. Will *your* hand brake hold against ground vibration and impact from other cars?

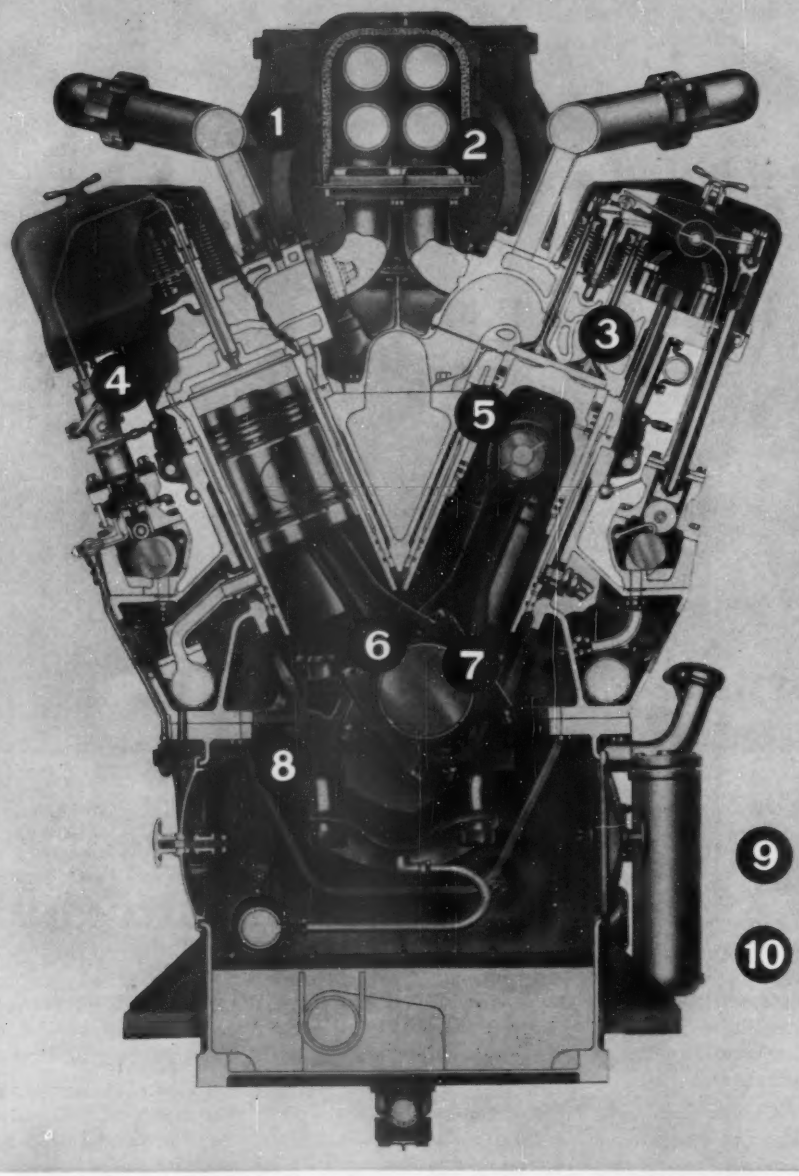
Cars equipped with Equipco non-spin hand brakes stay put even when subjected to violent impact. The Equipco brake is easy to operate since it is completely controlled by a turn of the wheel. And the wheel will only turn when it is purposely turned. The brakeman can set the brake with one hand and keep his other hand on the grab iron at all times for greater safety.

Equipco also builds a drop-type hand brake for flat cars and "piggy-back" cars, and a lever-type hand brake for drop-end gondolas. All are A.A.R. certified. A free 12-page booklet "Hand Brake Safety" covers the complete story. Write for yours today.

Equipco® HAND BRAKE DIVISION
UNION ASBESTOS & RUBBER COMPANY
332 South Michigan Avenue, Chicago 4, Illinois

UNARCO® Fibrous Products Division manufactures superior insulations—*Wovenstone®*, *Insutape*, *Insutube*—all specifically designed for railroad requirements.

NEW PERFORMANCE WITH



GEARED TO PROGRESS
PRI
MEMBER

Here are a few ALCO modernizations — most are available in kit form for application to the ALCO 244. Items which are normally accomplished by Factory Rebuild Service are starred.

1. **ALCO water-cooled turbocharger** — more efficient, responds rapidly to changes in speed and load, easy to maintain.
2. **Ni-Resist exhaust manifold** — reduces casting growth and failures.
3. **Cylinder heads** — strengthened with additional metal to distribute stress more uniformly, makes possible use of valve-seat inserts.
4. **High-pressure fuel injection with snubber valve** — more complete fuel combustion, lube-oil condition improved, line erosion reduced.
5. **Ni-Resist insert pistons** — top ring-groove wear reduced, increases ring mileage.
6. **Grooveless and partially grooved engine bearings** — oil-film thickness and load-carrying capacity increased.
7. ***Hardened, chrome-plated crankshaft.**
8. ***Serrated cylinder block** —eliminates fretting at joint surface of saddle and cap, prevents distortion and misalignment.
9. **Oil-bath filter** — maintains high efficiency over 94 per cent, reduced filter maintenance, reduces engine wear.
10. **Simplified amplidyne control system** — fewer parts in system with simpler circuits, maintenance reduced.

MODERNIZATION PARTS AND FACTORY REBUILD

Long-service ALCO locomotives can be modernized in railroad's shops or at ALCO's plant

Design improvements in ALCO 244 diesel engines, and locomotive chassis and equipment can add new efficiency in performance and help lower maintenance costs on long-service ALCO locomotives. These improvements are available to railroads in two ways:

Modernization parts are furnished in kits with complete instructions for application. Work is accomplished in railroad's own shops. Modernization kits are readily available from ALCO's regional warehouses.

Factory Rebuild Service applies modernization parts to 244 engines in ALCO's plant, also accomplishes chassis and equipment improvement. ALCO's extensive investment in machinery and rebuild methods permits operations such as saddle serration, crankshaft chromeplating, at moderate cost, and returns a completely remanufactured engine to the railroad.

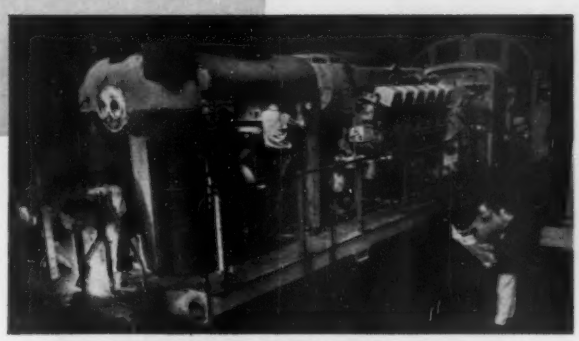
Complete information is available at ALCO's sales offices. Or, if you wish, write P. O. Box 1065, Schenectady 1, New York.

ALCO

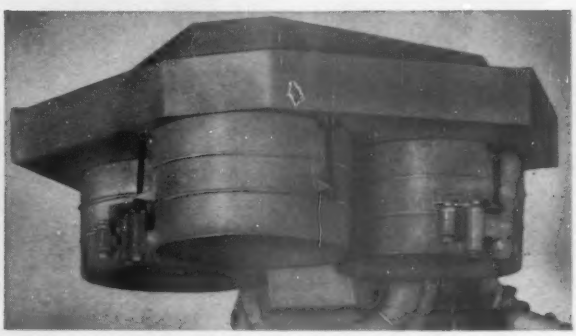
ALCO PRODUCTS, INC.

NEW YORK

Sales Offices in Principal Cities



Long-service locomotives are rebuilt in ALCO plant. Railroads choose complete Factory Rebuild Service for upgrading locomotives. Work includes all engine rebuild and modernization, as well as chassis rebuild and improvements. ALCO returns locomotives up to present specifications for service.



Many railroads have applied ALCO modernization parts to older units during regular overhaul schedules. The results have demonstrated better performance, improved efficiency and lower operating costs. Kits such as oil-bath filter modernization are readily available.

(Continued from page 52)

trainmaster at Conneaut; **J. A. Walker** named trainmaster at Peru, Ind.; and **R. J. Sliter** appointed terminal trainmaster at Bellevue.

NORTHERN PACIFIC.—Charles C. Gardner, assistant to general freight agent, St. Paul, appointed general agent at Winnipeg, succeeding the late **John Allan.**

L. R. Challoner, freight traffic manager, St. Paul, retired July 1.

PENNSYLVANIA. — Eugene R. Pilot, assistant superintendent of passenger transportation, appointed assistant passenger manager—passenger station manager, with headquarters as before at Philadelphia. **John E. Buckwalter,** passenger trainmaster, Harrisburg, Pa., transferred to Philadelphia. **Clifford B. Alban,** acting assistant passenger trainmaster, Philadelphia, succeeds Mr. Buckwalter at Harrisburg.

William C. Sommers, assistant freight traffic manager, Pittsburgh region, retired June 30.

Zechariah Chafee, assistant to manager of freight traffic research, Philadelphia, appointed manager of freight traffic research, succeeding **William W. Finley,** retired.

John A. Zullinger, freight trainmaster at Pittsburgh, named assistant superintendent, transportation — train movement, Pittsburgh region, succeeding **Charles R. Lucas,** who becomes assistant manager—freight operations, Philadelphia. **Charles W. Bolyard,** freight trainmaster—special duty, Philadelphia, succeeds Mr. Zullinger as freight trainmaster, Pittsburgh.

William C. Sommers and **William P. Veit,** assistant freight traffic managers, Pittsburgh and Philadelphia regions, respectively, retired June 30.

PULLMAN COMPANY. — W. H. Bradfield, superintendent, Tampa, Fla., transferred to St. Louis, to succeed **T. C. Birch,** who retired July 1. Mr. Bradfield's successor is **B. P. Bowen,** assistant to regional manager, Southwestern Region. **R. G. Brewer,** assistant superintendent, Boston, appointed superintendent there, succeeding **W. S. Murray,** retired.

QUANAH, ACME & PACIFIC.—Frank E. Watts appointed traffic representative, Detroit, and **Edward L. Wilson** named general agent, Quanah, Tex.

RAILWAY EXPRESS AGENCY.—Ivan A. Littlefield, general auditor, appointed director, audit bureau, New York.

John G. Macfarlan, general agent—traffic, Washington, D. C., appointed special representative, executive department, there.

Klink Garrett, government traffic representative, appointed general agent, traffic, at Washington, D. C.

(Continued on page 60)


One of the 160 Uses of
CONCRETE on Railroads
NO. 32 OF A SERIES
Reinforced concrete construction was widely used in the Pennsylvania Railroad's $2 million freight-house in Philadelphia. Costs and construction time were cut by using 26,000 lin. ft. of precast concrete roof and floor joists and 65,000 sq. ft. of roof planks.
Concrete freighthouses are just one of more than 160 uses of portland cement and concrete which enable railroads to improve service, provide greater safety, save time and money. The moderate first cost of such concrete improvements—plus their long life and low maintenance cost—result in low annual cost. This saves money for other necessary budget items.
PORTLAND CEMENT ASSOCIATION
33 West Grand Avenue, Chicago 10, Illinois
A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

PLUS these advantages:

LOW CONDUCTIVITY
Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity — .25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT
Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT
Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL
Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE
STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

HIGH SALVAGE VALUE
The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

Sudden and extreme temperature changes do not harm valuable perishables when they are shipped to market in cars insulated with dependable Streamlite HAIRINSUL.

Leading refrigerator car builders recognize this fact. That is why, for half a century, they have been specifying HAIRINSUL, the dependable all-hair insulation. They know it is the most efficient, most economical under ALL conditions . . . and that Streamlite HAIRINSUL weighs 40% less.

More reasons why refrigerator car builders prefer Streamlite HAIRINSUL are given at the left. There are more, too. Write for complete data.

AMERICAN HAIR & FELT COMPANY
Merchandise Mart • Chicago, Illinois

SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED.

all-stainless

for high-performance, profitable operation

All-stainless construction and unique design, mean more passenger room and a lighter, higher-strength car. In fact, 10 of these new Budd-built cars do the work of 16 conventional ones.

Passengers are overwhelmingly in favor of the Hi-Level ride, and the beauty and safety of these new stainless trains.

They're another important step in modern rail transportation. *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

(Continued from page 56)

READING. — Frank G. MacKenzie, assistant to comptroller, Philadelphia, appointed assistant comptroller, succeeding **Frank J. Moran,** retired. **Donald A. Hendrie** named assistant to comptroller.

J. E. Good, assistant engineer of bridges, Philadelphia, appointed engineer of bridges, succeeding **R. F. Wood,** retired. **R. J. Fisher** named to succeed Mr. Good.

RICHMOND, FREDERICKSBURG & POTOMAC.—Charles E. McCarty, manager of Potomac Yard, Alexandria, Va., retired July 1. Positions of manager and superintendent of Potomac yard have been consolidated, with the title of superintendent, which post will be held by **D. C. Hastings.**

SOUTHERN.—A. H. Neubauer, auditor at Cincinnati, appointed auditor of disbursements at Washington, D. C., succeeding **T. P. Carter,** retired.

Effective July 1, financial and disbursement accounting for the **Cincinnati, New Orleans & Texas Pacific** and the **Harriman & Northeastern** will be performed, separately for each company, at Washington instead of Cincinnati.

Charles E. Webb, assistant engineer of tests, Alexandria, Va., appointed engineer of tests there. **Ambrose E. Hinson,** material inspector, succeeds Mr. Webb.

SOUTHERN PACIFIC. — James E. Lyons, assistant general counsel, San Francisco, retired June 30. **Charles W. Burkett, Jr.,** assistant general attorney, San Francisco, promoted to general attorney.

WABASH.—Ray T. Sample, assistant general counsel, named general solicitor; **Eugene S. Davis,** general attorney, appointed general attorney

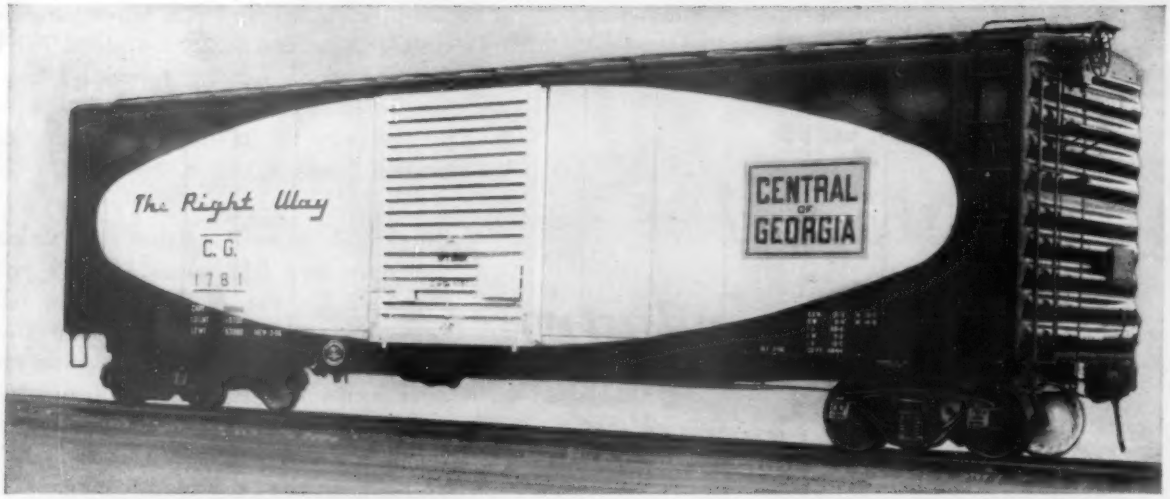
Ray T. Sample

and commerce counsel; and **Robert E. Simpson,** assistant tax auditor, named tax attorney. **Charles P. Lippert** named general attorney at St. Louis.

CENTRAL OF GEORGIA

again selects...

BARBER stabilized trucks



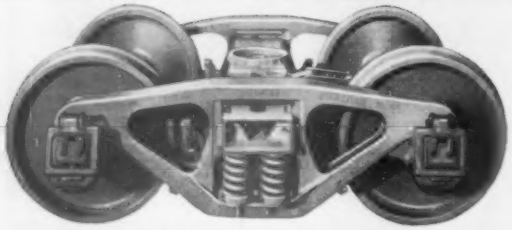
"the right way"

to assure smooth rides...

For smoother handling of valuable ladings . . . for the reduction of costly damage claims! Another 500 Central of Georgia "aluminum oval" box cars have just been equipped with Barber Stabilized Trucks. Now, 1,000 attractive "aluminum ovals" have Barber Stabilized Trucks . . . in addition to the thousands of other types of Central freight cars previously equipped!

The new cars were built by Pullman-Standard at Bessemer, Alabama.

We firmly believe that...nothing a railroad specifies does *so much* for lading protection, yet costs *as little* as Barber Stabilized Trucks. Standard Car Truck Company, 332 S. Michigan Ave., Chicago 4, Illinois. In Canada: Consolidated Equipment Co., Ltd., Dominion Square Building, Montreal 2.



Specify Smoother-Riding

BARBER

STABILIZED TRUCKS

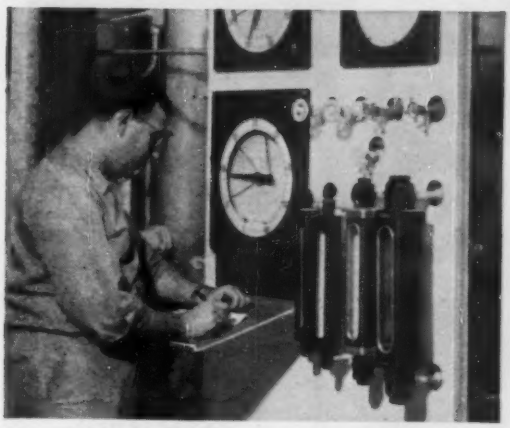
Add the experience and skill of Pittsburgh's

415 Finishes Technologists

to your finishing staff... without increasing your payroll!

Most modern paint research laboratory is now at your service to give you better finishes for your rolling stock.

• **Synthesis** of a new compound is one of the first steps in developing a new type of surface coating.



• **New resins** used in formulations for coatings are made in a pilot plant to provide quantities for field evaluation.

DO YOU need better finishes for today's rolling stock? Better finishes for tomorrow's demands? Finishes with longer-lasting gloss and color, greater resistance to the damaging effects of moisture, grease, stains, alkalis, acids, salt as well as the damaging effects of sun and weather?

• **If you do...** then add the superior skill and knowledge of Pittsburgh's Finishes Technologists to your finishing staff, without increasing your payroll. In its new Paint Research Center at Springdale, Pa., Pittsburgh offers you the most modern facilities for fundamental and applied research in the paint industry. Here a highly trained staff of chemists, engineers and technicians, working with new materials, processes and application methods maintains Pittsburgh's traditional leadership in the field of railway finishes.

• **Among the new** developments is Pittsburgh's new Hot-Spray CARHIDE, now being used on many hundreds of cars. Here you get the equivalent of two coats of paint, applied cold with a single application. Hot-Spray CARHIDE goes on more uniformly, has better adhesion, dries quickly. Refinishing is speeded as application time is cut in half and drying time between coats is eliminated.

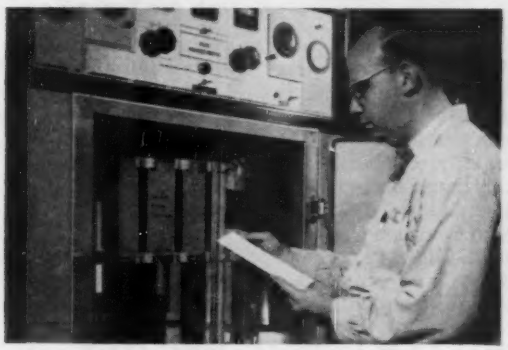
• **If you have** unusual refinishing problems, bring them to us. We'll place our manpower and facilities at your disposal. Write, wire or call Pittsburgh Plate Glass Company, Industrial Finishes Division, 1 Gateway Center, Pittsburgh, Pa.

PITTSBURGH PAINTS

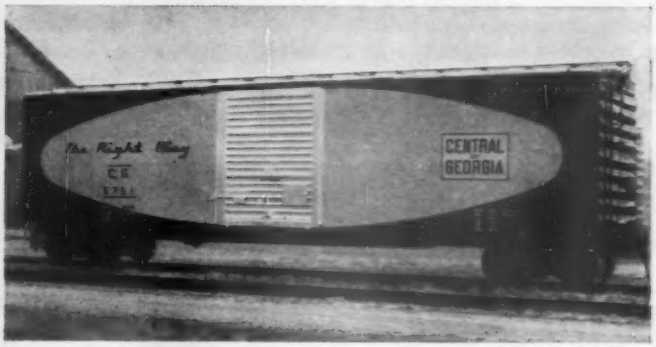
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

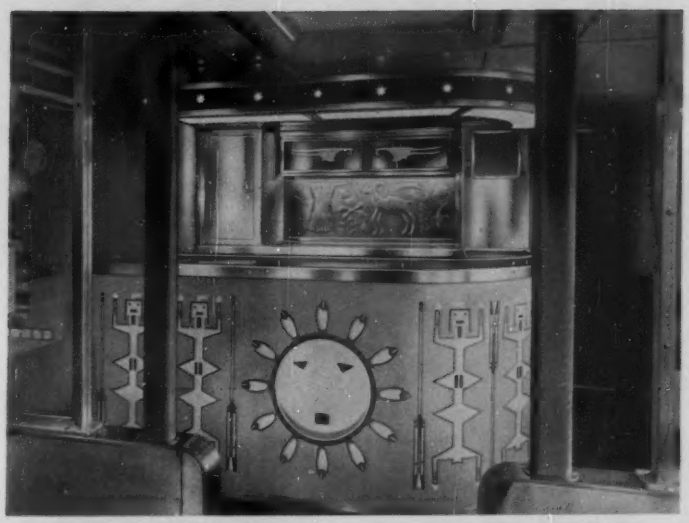
IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED



• **In this equipment** accelerated weather conditions are created to test finishes.



• **Special Pittsburgh** Railway Finishes were used on many of the new freight cars recently put into service by the Central of Georgia.



on Santa Fe's new El Capitan...

Built by Budd

BAR IN DOWNSTAIRS LOUNGE: Service bars by Colonna are friendly havens for beverages and refreshment. Magnificently appointed bar in downstairs lounge. Service buffet in Sky Lounge.

COLONNA SERVICE EQUIPMENT
in Diner Kitchen, Service Bars & News Stand

Photos: Courtesy the Budd Co.

On this magnificent new train the builders have combined the most advanced engineering with the inspired skill of master craftsmen and designers to provide new luxury and new comfort for the traveling public. Colonna is proud to have participated in so important an achievement.

SERVICE BUFFET IN SKY LOUNGE

NEWS STAND AND NOVELTY SHOP

COLONNA TRAVEL-LAV FT-216 was selected to provide complete washroom facilities in the limited space available. This combination unit with stationary toilet and fold-away wash basin affords all the comforts and conveniences of a conventional lavatory.

ALL-ELECTRIC KITCHEN BY COLONNA: Condensed version of the finest hotel kitchens. A veritable chef's delight, for the preparation of everything from snacks to the finest of meals. Equipped for electrical cooking, electrical dishwashing, electrical refrigeration. Food is conveyed from the kitchen to the upper level dining room by means of two electrically operated conveyors.

NEWS STAND AND NOVELTY SHOP BY COLONNA: A unique accommodation by the Santa Fe to display gifts, toys, novelties, candies, reading matter.

Over 25 years of continuous service to the railroads of America and countries abroad.

DESIGNERS AND MANUFACTURERS OF STAINLESS STEEL SPECIALTIES

ANGELO COLONNA

Westmoreland & Boudinot Sts., Phila. 34, Pa.

since new conceptions in components create new and better cars . . . it is difficult

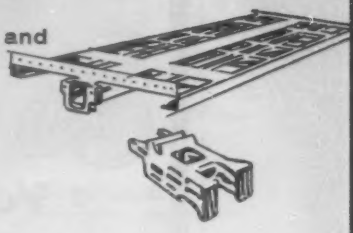
to show the impact of INTERNATIONAL STEEL'S corrective component engineering without picturing completed cars in our advertisements

this has led many to believe that we are car builders.

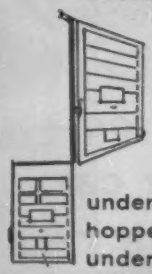
we are not.

we are precision fabricators of correctively designed **components** such as . . .

underframes and bulkheads for bulkhead flat cars, pulpwood cars and piggy back cars . . . underframes, side assemblies and floors for gondolas . . .



underframes, bulkheads and doors for the unit load car . . . underframes, side assemblies and doors for box cars . . .



underframes, side assemblies and hoppers for hopper cars . . . underframes, side assemblies and doors for refrigerator cars . . . underframes for cabooses

component conception for profit potential . .

INTERNATIONAL STEEL COMPANY
RAILWAY DIVISION EVANSVILLE 7, INDIANA

CLASSIFIED ADVERTISEMENTS

Tenders are invited for the supply of 35 bodies and underframes complete for air-operated side dump cars to the New Zealand Government Railways. The bodies and underframes will be fitted to bogies built in New Zealand.

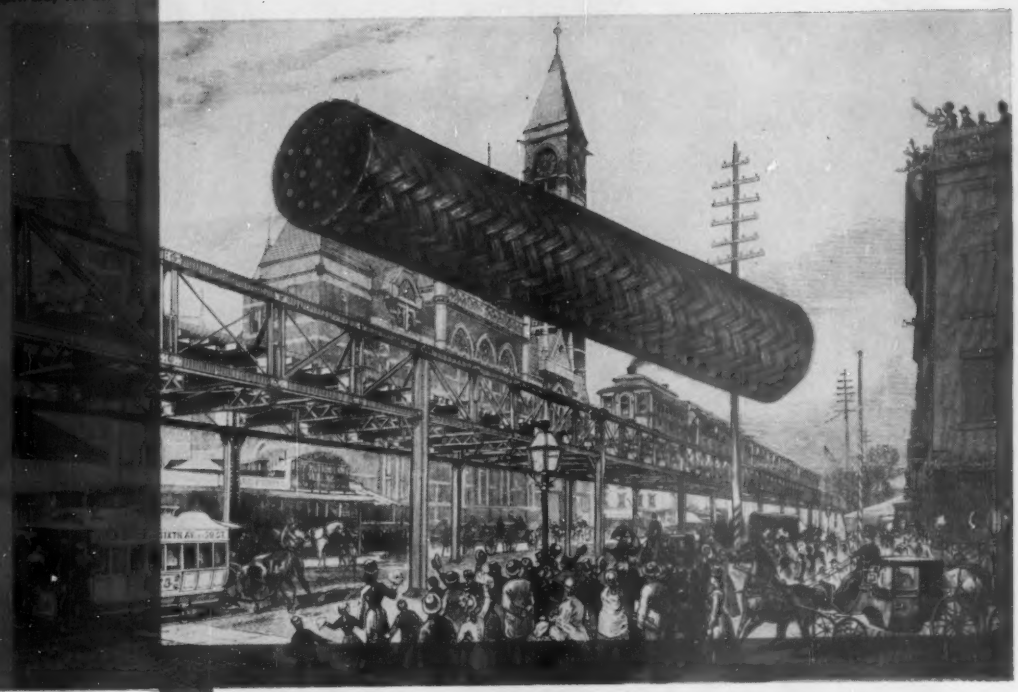
Copies of specifications will be supplied on request to the New Zealand Government Trade Commissioner, 1145 Nineteenth Street, N.W., Washington 6, D.C.

Tenders close with the Railways Department, Wellington, New Zealand at 4 p.m. on Wednesday, 8 August, 1956.

RAILWAY AGE
Workbook of the Railways
(Adbook of the Railways, too)

ADVERTISERS

Kerite cables aided in the development of New York's rapid transit. Pictured is the first train on the Gilbert Elevated Railroad passing through 6th Avenue, near Jefferson Market Court, April 26, 1878.



DEPENDABILITY

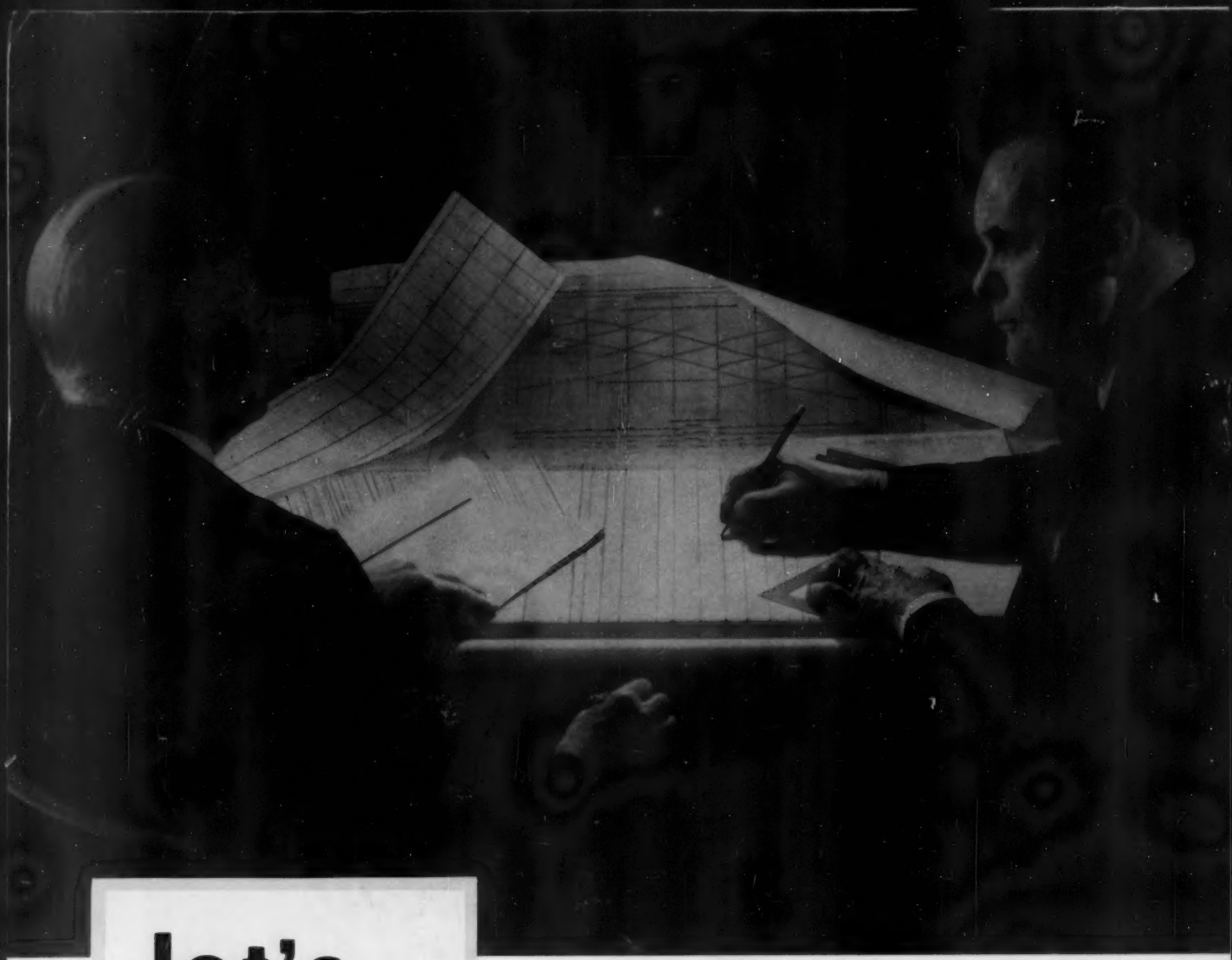
The Kerite Company has been identified with industrial progress in this country for the past century. Now in its second century, Kerite remains humbly dedicated to offering the best in quality and service.

The value and service life of a product can be no greater than the integrity and craftsmanship of its maker.

KERITE CABLE

THE KERITE COMPANY—30 Church St., New York 7, N. Y.
Offices also at 122 S. Michigan Ave., Chicago; 582 Market St., San Francisco; 3901 San Fernando Rd., Glendale 4, Calif.; 31 St. James Ave., Boston

Founded 1854



let's look again at cTc

GRS Transportation Research engineers can study your road, can recommend an arrangement to fit your needs, present as well as anticipated.

Centralized Traffic Control is a method of operating trains by signal indications controlled by an operator and directed by central planning. Here are the essential elements:

- ***Reliable communications***
- ***Reliable means of controlling signals***
- ***A fail-safe signal system.***

cTc has no fixed pattern. Many factors determine the specific physical means by which cTc can be put into effect—traffic patterns, existing facilities, anticipated changes, etc.

The apparatus for cTc may be simple or relatively complex; it all depends on the job you want to do. cTc does not necessarily require power switches at all locations, electric locks at all hand switches—or even intermediate signals between passing sidings. These and other facilities are valuable adjuncts where traffic warrants their use, needless expense where it does not.

GRS

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